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TWO YEARS AMONG NEW GUINEA CANNIBALS

TWO NEW GUINEA DANDIES.

They are natives of Dinawa. Notice their tight-laced waists and the nose ornaments (chimani) of polished shell.

TWO YEARS AMONG NEW GUINEA CANNIBALS

A Naturalist's Sojourn among the Aborigines of Unexplored New Guinea

By

A. E. PRATT

Gill Memorialist, Royal Geographical Society, 1891

Author of "To the Snows of Tibet through China," etc.

With Notes and Observations by his Son

HENRY PRATT

And Appendices on the Scientific Results of the Expedition

With 64 Illustrations and a Map

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TO

MY WIFE

THE COMPANION, PRESENT OR ABSENT

OF MY MANY WANDERINGS

PREFACE

THIS record of two years' scientific work in the only country of the globe that has still escaped exploration purposely avoids the dry detail of a Natural History Report, such as might properly be submitted to a learned society, and is intended rather to set forth to the general reader the vicissitudes of the traveller's daily life in unknown New Guinea, or Papua as I prefer to call it. Every hour brought a new interest, and it was with the intention of trying to communicate some impression of that wonderful land in which we sojourned, that the present account has been undertaken. If the result is disappointing to the reader, the fault must lie with the writer and not with Papua.

During my brief residences in the known parts of New Guinea, I received much kind assistance and furtherance in my marches into the wilds from officials, missionaries, and settlers, and I would here especially acknowledge my indebtedness to his Excellency the Lieutenant-Governor, Mr. G. Ruthven Le Hunte, Mr. A. Musgrave, C.B., Captain Barton, the Hon. D. Ballantine, Mr. Robert Hislop, and Mr. James Wood; His Grace Archbishop Navarre, Coadjutor Bishop de Boismenu, both of the Sacred

Heart Mission; Dr. Laws and the Rev. H. Dauncey of the London Missionary Society.

The Dutch officials to whom I am under deep obligations are Mr. Kroesen, the Resident of Merauke, Mr. M. C. Schadee, the Controller, and also the captain of the gunboat *Neas*.

For permission to reprint the section on the Lakatois and several other passages I am indebted to the *Wide World Magazine*, and the chapter on "British Trade Prospects in New Guinea" is given by consent of the *British Trade Journal*.

My particular acknowledgments are due to Messrs. G. H. Kendrick, Mr. G. T. Bethune Baker, F.L.S., and Miss Wilmott, without whose help the expedition could not have been undertaken, and I must also mention Mr. S. H. Soper, F.R.G.S., another friend whose interest and assistance was of the greatest value to me.

A. E. P.

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CHAPTER I

BREAKING THE GROUND

The Author's many Journeys—New Guinea more interesting than all—The Second Largest Island in the World, and the last to guard its Secrets from Man—Its Vast Possibilities to the Trader and the Man of Science—Great Riches in Birds and Insects—770 known Species of Birds—The People—Their many Dialects—A Geographical Reason for this—Toilsome Travel — Razor-like Ridges in Endless Succession — The Author's Camps—Journeys Outlined—In Unexplored Country —Gorgeous Scenery—Variations of Temperature—The Chief Bugbear, Transport.

TWO YEARS AMONG NEW GUINEA CANNIBALS

CHAPTER I

BREAKING THE GROUND

In the course of thirty years of almost continuous journeyings in both hemispheres, it has been my fortune to stray far from the beaten tracks and to know something of the spell and mystery of the earth's solitudes. My work in quest of additions to the great natural history collections, both public and private, of England, and to a less extent of France, has led me to the Rocky Mountains, the Amazons, the Republic of Colombia, the Yangtse gorges, and the snows of Tibet; but it is safe to say that none of these has aroused my interest and curiosity in so great a degree as the scene of my latest and my next expedition, the still almost unexplored Papua, second largest of the world's islands, and almost the last to guard its secrets from the geographer, the naturalist, and the anthropologist.

Fifty years ago, schoolboys, looking at their map of Africa, blessed the Dark Continent for an easy place to learn. A few names fringed the coast: inland nearly all was comprehended under the cheerful word "unexplored." Such in great measure is the

case with New Guinea to-day. Its 300,000 square miles of territory, held by Great Britain, Germany, and the Netherlands, and now lying fallow, are destined in the course of the next half-century to enrich the worlds of commerce and of science to a degree that may to some extent be forecast by what is already known of very restricted areas. What New Guinea. may become to the trader is outlined later in the present volume, merely, be it noted, from the outside observer's point of view, but this of course has in it a large measure of uncertainty, contingent on conditions of

> "Labour and the changing mart and all the framework of the land."

Be this as it may, one thing remains sure, the extraordinary value of Papua to the man of science, particularly to the entomologist and the ornithologist. In the department of ornithology alone, we already know of 770 different species of birds inhabiting the mainland and the islands, which places it in this respect far above Australia, which, with a superficial area nine times greater, possesses less than 500 species in all.

The ethnologist, too, has in Papua a happy hunting ground; for the tribes on the fringe of exploration present wonderful varieties of type, and as the mountain fastnesses of the interior are gradually opened up, there can be no doubt that rich material for the propounding of new problems and perhaps the solution of old ones will come to light. Language is curiously diversified: here you meet a tribe with a distinct speech, and camping near them for a time you learn the common currency of their tongue; a

LAKATOIS PREPARING TO SAIL.

few miles further on appears another people, perhaps not greatly differing in type, but with another language altogether. Thus at Dinawa, where we were encamped for five months on the foot-hills of the Owen Stanley range, the native phrase for "Make up the fire" was "Aloba di"; while at Foula, only eighteen miles away as the crow flies, but far further on foot, the phrase ran "Aukida pute." It is in the statement "far further on foot," of course, that the main reason of this linguistic variation is chiefly to be found; for travel in the Papuan highlands is extraordinarily toilsome, owing to the exceeding abruptness of the configuration, and the endless succession of almost razor-like ridges. Thus the tribes are confined to narrow areas. Long rough ascents and descents and devious windings are the portion of the wayfarer who wishes to reach some spot that may even be visible from his last halting-place. This experience, and our entire dependence on native carriers to transport our heavy baggage, with the various *contretemps* and difficulties besetting the conduct of such a caravan, tempted me at one time to call this book "Ups and Downs in Papua," as being at once literally and metaphorically true and descriptive.

Despite the difficulty of migration, however, it is certain that had our mission been one of exploration pure and simple we could, during our two years' sojourn, have traversed a far more extensive region than we did. But our first concern was the examination of the butterflies, moths, and birds of the Owen Stanley range, and that within particular and some-

what restricted areas, so that our work necessitated encamping sometimes for months at a time at one particular spot, in order that the collection and preservation of our specimens might be carried on under the most advantageous conditions possible in such a wilderness. To this end we built two permanent camps, one at Dinawa, and the other at Ekeikei, at altitudes of 3600 and 1500 feet respectively. From these bases we made short expeditions in various directions, and established temporary camps on the St. Joseph River, Mount Kebea, and finally at Mafalu, our highest point of attainment, 6000 feet above the level of the sea among the fastnesses of the Owen Stanley range. But even that altitude is comparatively insignificant in the magnificent highlands of Papua. The higher we rose it was only to catch sight of still loftier ranges that piled peak on peak as far as the eye could reach. The only one of these that has as yet been trodden by the white man is Mount Victoria, which rises to a height of 13,000 feet. This was made the objective of a special expedition by Sir William Macgregor, who recently crossed British New Guinea, a journey which took him fifty-one days to accomplish. Sir William has also explored the Fly River tentatively, and D'Albertis followed its course for 600 or 700 miles; but when these achievements are mentioned, one has exhausted nearly all the serious efforts that have been made in Papuan exploration. Within the last year the Netherlands officials have issued a map that makes many valuable additions to our knowledge of the topography of the coast-line of their territory.

BREAKING THE GROUND

It may make for clearness in following my journeys if the reader will at this point submit for a moment to the drudgery of a brief examination of the map, for my trail exhibits various doublings backwards and forwards, and consequently exposes the narrative to the risk of confusion, unless the main outline of the itinerary be followed. It had been my intention to work first in Dutch New Guinea, but various accidents, and the hostility of a warlike tribe, brought these plans to an untimely end, and I had to spend the greater part of my time within the borders of the British possession. Port Moresby, the British Government station, consequently became my main base of operations, and it was in a north-westerly and south-easterly direction from that settlement that my journeyings lay. On the first of these I went by sea from Port Moresby north-west to Yule Island, separated from the mainland by Hall Sound, and then I struck up the Ethel River as far as Oofafa, where we began our march into the interior. The chief points of the route as noted on the map were Epa and Ekeikei, Madui, and then on to Dinawa, where we established our first camp, and settled down for five months' work, which included a short expedition to the St. Joseph River. Returning to Port Moresby, and having some time to spare, I and my son went down the coast 75 miles to the south-east, partly on foot, partly by boat, by way of Tupeselae, Kappa-kappa, Kalo, and Kerapuna, as far as Hood's Bay, a journey rather of observation than of exploration, for the region is within the sphere of missionary enterprise, and cannot be regarded as altogether unknown, although the geographer has not

yet by any means had his last word upon it. Reaching Port Moresby by a reversal of the same route, we returned once more to Yule Island, and struck inland by way of Mekeo and Epa to Ekeikei, where we built our second and most elaborate camp, which served us as the base for our furthest journey to Mount Kebea, and thence inland by way of Googoolee, Cooloo-coolu, Babooni, Amana, Foula, and Avola, to Mafalu, our highest point.

It may be worth while noting that as soon as we had passed Bioto Creek on the Ethel River, existing maps ceased to be of use to us, and with the exception of a few vaguely indicated mountains, presented a complete blank. Such outlines of topography as we have filled in give in every case the native name of the place. The fashion of rechristening localities, although often complimentary to European explorers and their friends, pastors, masters, and disciples, and probably commemorative of a discovery, seems to me always to sever an interesting link with the country under examination. For this reason I prefer the melodious native name Papua to its western supplanter New Guinea.

Our chief movements inland may comprehensively be taken to lie within a region bounded by a radius of 50 miles around Delana on Hall Sound. On entering the unexplored region we found ourselves at first in a flat, swampy country, intersected by a few tiny creeks, some not more than two feet wide, running through grass. We next passed the eucalyptus belt and then came the forest proper, in which the trees were at first set in isolated patches. Undergrowth there was, but it did not attain any density, and at

intervals we could trace the trails of the sandalwood cutter. Not long after leaving Oofafa we found a rocky eminence, from which we enjoyed a lovely view of the entire Bioto Creek winding between a dense border of mangroves, the vivid green of which marked the course of the inlet, even when the shimmer of the water in the sunlight was entirely veiled by the overhanging vegetation. Beyond lay the broader waters of Hall Sound, bounded by the wooded shores of Yule Island, and to the west we could descry Nicora, a small village on a hill of red clay. The vista was closed by the sea, and in the clear atmosphere the picture was one to be remembered. We then entered a flat tract, an apparent plateau, at a height of 1000 feet, and for a time travelling was over comparatively easy ground, but at Epa the forest and our difficulties began in earnest. Henceforward we had to depend on one or two trails very difficult to follow, and hills and valleys became continuous. Fifteen miles inland lay before us a line of rugged peaks, whither we were bound, but many more miles than fifteen would have to be covered before we reached them. Further off still towered Mount Yule, our first glimpse of the Papuan Alps. Passing Ekeikei we entered the region of ridges, often scarcely twelve inches wide, and affording only the most precarious foothold. The path as we rose became still more rugged, and was crossed by numerous creeks. Then the character of the forest changed, and we traversed damp and gloomy tracts, where the thick vegetation excluded the sunlight. The track at this point skirted vast and threatening precipices. At Madui we encountered peaty and

spongy ground, thickly interwoven with roots, which impeded our progress and made the advance peculiarly toilsome, and the last stage to Dinawa was a long dip and a longer ascent. Once there, however, we were rewarded by a delightfully bracing climate and a glorious panorama of mountain scenery, a delight we often longed for at Mafalu, our furthest and highest point, where all view, save through an opening we ourselves cut in the trees, was denied us. Even that was generally obscured, so incessant was the rain and wetting mist. At favourable moments, however, we would see through our clearing the sunlight in the valley far below us, although we ourselves, dwelling as we did among the clouds, were denied that boon.

Such then, in brief outline, were the changes of scenery through which we passed. The alternations of climate were not less varied. In Dutch New Guinea it was very hot and humid, often 150° F. in the sun and 110° in the shade. On "cool" nights we had temperatures varying from 75° to 80°. At Port Moresby 160° was no uncommon temperature, and this was rendered worse by the lack of shade and the stony, arid country. The great heat begins to be felt about 11 A.M., and lasts until 3 P.M. during the season of the N.W. monsoon. The atmosphere is, however, fairly dry at times, and the highest temperature is not nearly so unendurable as I have found 90° in the shade at Manaos, at the confluence of the Amazon and the Rio Negro, where the air is saturated, and one sits mopping oneself continually and praying for sunset, although even that brings but slight relief. This never happens at Port Moresby, where there is

sometimes a pleasantly cool evening. Towards nightfall the S.E. monsoon dies away, and the same holds good for Yule Island and Hood's Bay. For some distance inland these conditions prevail, but after Ekeikei (1500 feet) there is a decided change. Considerable humidity prevails in the forest, and although at midday the heat is scarcely less oppressive than on the coast, yet the traveller is sustained by the prospect of relief, for the evenings are deliciously cool. The average day, too, was not unbearably hot at these higher altitudes. In the neighbourhood of the Deeanay precipice, owing to the dense forest and the plentiful streams, it is quite cool all day, and at Dinawa (3600 feet), although we have recorded noon temperatures of 120° in the sun, the average at 4 A.M. was from 63° to 65°. Winds were infrequent, but at night there was a brief land breeze from the higher mountains.

On the Kebea the climatic conditions are very similar, but there is more mist, and in the morning the valleys are filled with great masses of white rolling cloud, which rise and disappear as the sun gains power. These vapours sometimes assume a perfectly level surface, so that they resemble an ocean or a vast plain of snow, through which the higher peaks rise like islands. At Mafalu the average temperature was down to 59° F. at nights, and highest in day 80° under the leafage of the forest, and mist and rain were almost continual from 11 A.M. to 3 P.M. As the sun sank the heavens would clear, and the mist floated past in thin wreaths, or lay still in long, ghostly trails if no wind blew. The nights were often cold,

and these altered conditions were not without their visible effect on animated nature, for at Mafalu the insects changed, and we secured a fine selection of Lepidoptera we had not met with before.

This brief sketch of the configuration and conditions of the country through which we travelled may, I trust, serve as a key to the more detailed account of our journey, and with the directions and altitudes thus succinctly placed before him, the reader may possibly find it easier to follow us up hill and down dale. There is one more point I would venture to impress upon him, a point which will recur again and again—he may fancy *ad nauseam*—the difficulties of transport in Papua. But that was the main crux of our experience, and its importance can hardly be realised by one who has not undergone similar troubles. You are entirely in the hands of the natives, without whom you cannot stir a foot. All your impedimenta, your food, stores, scientific implements, and "trade" (material for barter, the equivalent of ready money) must go on the backs of your cannibal friends, a people without organisation, who are hard to collect and hard to persuade to follow you. It is necessary to rely on yourself to secure followers, though here and there a chief may aid you. One such, the greatest "character" we encountered in Papua, will be introduced to the reader at the proper place. On the march continual apprehension besets the traveller lest his carriers bolt, for if this happened in the interior he would be done for, and he would have a terrible business to get out of the country, if indeed he got out at all. Hence the reason why I have dwelt on

GUARDING THE WORKERS.

Cultivated ground is generally some distance from the villages. It is filled by young women, who are guarded by young natives armed with spears.

our perpetually recurring difficulties with carriers, for the natives were veritably our staff and scrip; and had these failed us at a crucial moment, our expedition would have broken down utterly, to the great loss of those who had risked much on the undertaking.

On the commission of several friends, all scientific enthusiasts, whom I have named elsewhere, I and my son Harry, a lad of sixteen, left England in January 1901, and sailed eastward on board the *Duke of Sutherland* to Thursday Island, whence we proceeded on board the Netherlands gunboat *Neas* to Dutch New Guinea. My brief stay there, and the disappointments that led to my seeking a different field of operations, form the subject of the following chapter.

CHAPTER II

DISAPPOINTMENTS IN DUTCH NEW GUINEA

Dutch New Guinea — The Coast — Unsavoury Mud-banks — Merauke—The Dutch Settlement described—Its Wonderful Modernity—A Fierce Tribe, the Tugeri, now described for the First Time—Their Appearance and Habits—Their Continual Murderous Raids — The Fearful Bamboo Knife — Scientific Work here impossible owing to Danger of going beyond Settlement Boundaries—Outbreak of a Mysterious Disease at Merauke — Its Swift Deadliness — The Symptoms — Determine to leave Dutch New Guinea and prepare for a March into the Unexplored Interior.

CHAPTER II

DISAPPOINTMENTS IN DUTCH NEW GUINEA

As we approached the shores of Dutch New Guinea, we first descried low-lying tracts of marshy land. To the water's edge came tall trees loaded with orchids of the most brilliant hues and of many varieties, notably the Dendrobium. The mangrove swamps, elsewhere so common in New Guinea, were here entirely absent. Under the trees, close even to the water's brink, could be seen a dense tangled undergrowth. There was no beach, only muddy shores. At low tide the water recedes, probably for a quarter of a mile, leaving hard mud flats capable of sustaining men barefoot. During the winter monsoon a heavy surf would break on these flats, but we arrived in fine weather, and the water was perfectly calm.

Of course, the *Neas* could not go inshore, but had to stand off to a distance of at least ten miles, and we had to land by the boat. A prominent feature of the landscape was a great spreading tree, which the Dutch sailors had taken as their chief bearing for finding the mouth of the Merauke River. Had the hostile natives only known how the access to their jealously guarded territory depended upon that one landmark, it would certainly not have been allowed to stand long. These characteristic shores fringe the mouth of the Merauke River, which empties itself through a

small estuary about three times as wide as the Thames at Greenwich. It is navigable for about six miles, and at the furthest end it so narrows that the vessel could be put about only by a clever manœuvre, during which her bow and stern all but touched the banks. With a small survey boat, however, such as the *Neas*, drawing from 10 to 12 feet of water, the river may be navigated for about 160 miles. From larger vessels lying in the river off the new Dutch settlement of Merauke, which was our point of arrival, it was usual to land in a small dinghy.

A row of a few yards brought us to a primitive staging, built on piles, supporting a floating platform of logs, very slippery with the slime left by the river at high tide. These treacherous logs were far enough apart to permit of a man's slipping easily between them into the unsavoury stream. Unsavoury indeed it was, for the waters of the Merauke are blue with a greasy alluvial deposit, closely resembling the "blue slipper" so well known to geologists in the Isle of Wight. The Dutch Settlement lay close to the landing-stage. It presented a rough collection of houses and barracks for the Netherlands troops. The largest building was the barracks, a fairly well-built structure of wood, capable of accommodating all the Dutch troops, a force of about 150. The house of Mr. Kroesen, who was at that time the Resident, was quite an attractive building, with a glass roof and thin bamboo walls hung with a few curtains. It contained ten apartments, all on the ground floor. Next in importance was the house of the Comptroller, Mr. Schadee, which had only one apartment, with a large

CURIOUS DRUMS OF THE TUGERI (DUTCH NEW GUINEA).

The body of the drum is cut and hollowed from a solid trunk, and curiously carved. The drumheads are of lizard skin.

projecting roof and a fine verandah, under which the Comptroller entertained his friends. A little distance away were the open sleeping sheds of the Javanese convicts who had been brought there to build the Settlement and to drain the marsh.

It is curious that the Dutch always choose low-lying spots for their settlements. Some instinct of home seems to draw them to the flat lands, and better sites at a loftier elevation are neglected. Merauke, however, was chosen for another reason. The Dutch had been good enough to make their Settlement here to prevent the Tugeri from making raids on to the British territory. The thoroughness of the Dutch character, however, appears in the equipment of their station. When I arrived at Merauke the Settlement was only two months old, but it was already furnished with every accessory of civilisation, even including iron lamp-posts from Europe. It offered, in this respect, a striking contrast to the old British Settlement of Port Moresby. Merauke was built in a forest clearing, and the Dutch had already laid out gardens after the Netherlands pattern, and were raising vegetables in the coffee-coloured soil—the result of centuries of alluvial deposit—a soil so rich and productive that beans may be gathered three weeks after being sown. The gardening is carried on entirely by the civilians, the officers and men confining themselves exclusively to their military duties. As the Settlement had been established in the centre of a dangerous and turbulent district, it was protected with barbed wire defences and with a ring of block-houses on the landward side. The state of unrest then prevailing pre-

vented me from carrying on my scientific work. I had come to Merauke to explore and collect in new territory, but the long-standing difficulty with the warlike Tugeri tribe was still acute, and the very day after I landed we had abundant proof of how unwise it would be to penetrate into the interior. On that day three or four Javanese convicts who were working on the edge of the clearing were heard to shout as though in distress. In five minutes an armed guard was on the spot, but all the convicts were found decapitated by the head-hunting Tugeri. The heads had been taken off with the bamboo knife so cleverly, that the doctor on board our ship told me that no surgeon with the latest surgical instruments could have removed so many heads in so short a time.

This bamboo knife of the Tugeri is a very remarkable weapon. It is simply a piece of cane stripped off from the parent stem, leaving a natural edge as keen as the finest tempered steel.

Nor was this the only outrage. A Chinese woman had died, and had been buried in the graveyard near the Settlement. The next morning the grave was found to have been violated, the head taken, and all the clothing removed. The Tugeri never showed themselves all this time, but it was known that they were watching Merauke from the dense screen of undergrowth which came down to the edge of the clearing.

British settlers on the western boundary of British New Guinea have for a long time been harassed by Tugeri raiders from the Dutch side, and the Lieutenant-Governor's report for 1899–1900 contains

an exhaustive account of the negotiations between the British and Dutch authorities for the suppression of these outrages and the indemnification of sufferers. In 1896 Sir William Macgregor undertook a punitive expedition against the Tugeri, and at the time believed that he had finally driven them out of British territory; but during a murderous raid on the Sanana tribe, shortly before 1900, many persons were killed and carried away. The chief result of the negotiations, apart from the settlement of indemnity and the undertaking of search for missing persons, was the Dutch decision to appoint a resident official for that part of their territory which adjoins the British possessions. Hence the establishment of the Merauke Settlement, and the appointment of Mr. Kroesen to take charge of it. The Netherlands Government has guaranteed a special sum for the administration of Merauke, and the Dutch officers there have also been authorised to correspond directly with the British officers in the western division on matters requiring their mutual attention, instead of, as the Blue Book says, "by the circumlocutory channels of their respective Governments."

My opportunities for observing the Tugeri were, therefore, necessarily limited, but I am, I believe, the first person who has made any study of this remarkable tribe, and, as far as I am aware, they have remained hitherto undescribed. They are a very numerous people, inhabiting a tract of country extending as far west as the Marianne Strait, and as far east as the Fly River at longitude 141°. Inland their boundaries are unknown, but it is probable that they

extend a considerable distance from the coast. They are known to have co-terminous boundaries with the Kewi people, from whom the British draw their police, and who are first found at the mouth of the Fly River.

The first to visit the Tugeri was a renegade missionary, who had absconded with some of the mission funds. He came upon the tribe by accident. They captured him, took away his boat, his clothes, and all that he possessed. Curiously enough they did not kill him, but gave him a house and food. He stayed with them on very friendly terms for about six months, and was at length taken off by a schooner which chanced to touch on the coast.

The second white man who observed them was Captain Pym, who is said to have been the discoverer of the Merauke River, and who was certainly one of the first traders there.

The Tugeri are a fine race, very fierce, and absolutely unspoiled by European vices. The men stand about 5 feet 8 inches on an average, and are clean-limbed, powerful fellows, capable of any amount of endurance. As a race, they are broad-shouldered, sinewy, and of enormous strength. No European can draw their bow. This weapon is made of a longitudinal section of the bamboo. Near the grip the diameter is about $3\frac{1}{2}$ inches, and the wood tapers at each end to a diameter of $\frac{3}{4}$-inch. The string is of twisted fibre, and the arrow, which is made of a reed, carries to a distance of at least 300 yards. Like all savages, they are admirable marksmen.

In the typical Merauke Tugeri the head is rather

THE NATIVE METHOD OF TREE CLIMBING.

conical, and the forehead high but receding. The hair is sparse, beginning well up on the cranium, and falling in long strands to the middle of the back beyond the shoulder blades. The hair is plaited with grass and string, and from the plait at the back rises a single osprey feather. The eyebrows are straight and meeting, the eyes black, large, and heavy. The nose is broad and flat, but with a prominent bridge, the mouth degraded and fatuous, but the lips neither so thick nor so protruding as the negro's. The ears lie fairly flat to the head, and are not abnormally large. The men wear an enormous ear ornament of bamboo bent into an open ring. Round the periphery of this ring the flesh of the lobe of the ear, previously perforated, is stretched in infancy, and as the individual grows the natural spring of the bamboo stretches the flesh more and more, until in manhood a loop is formed big enough to hold a ring of at least 4 inches in diameter. It is extraordinary how the tribesmen contrive to move amidst the tangled forest without hindrance from this abnormal expansion of the lobe, the most unusual flesh decoration to be found amongst mankind. When the bamboo is out the loop hangs like a long pendant, a perfect skein of flesh, a peculiarly hideous accessory of savage adornment. Some of the Tugeri wear an apology for a beard, or rather two scraggy tufts of hair depending from each side of the chin. The use of pomatum in any form is unknown. The teeth are strong and fairly regular, but perfectly brown, owing to the habit of chewing the betel-nut.

For personal adornment the Tugeri wear two crossed straps of dogs' teeth strung together with

grass. Each strap is about 3 inches wide, and is formed of nine parallel rows of teeth. The strap that rests on the left shoulder passes under the right armpit; that over the right shoulder passes outside the left arm above the elbow. The straps are lightly fastened at the point where they cross the breast. Round the right arm, just above the elbow, they wear a curious armlet. In the case of the richer tribesmen this is of shell, decorated with grass, or of grass decorated with shell. The breadth is from 5 to 6 inches. On the stomach to the right are two or three horizontal scars made by cutting or burning. These are self-inflicted for superstitious reasons. The lower part of the stomach is tightly drawn in (often extremely tight) with a coil of finely plaited fibre. This seems to be worn for elegance alone, and tight-lacing is a ruling fashion among the Tugeri dandies: the tighter the lacing the greater the dandy. From fifteen to sixteen years of age the young men are hopeless victims to fashion. The Tugeri go barefoot, but wear grass anklets adorned with shells, which rattle like castanets as they walk. I observed, however, no dances, although these, I understand, are performed in their villages. For decency's sake they wear a shell after the manner of the statuesque fig-leaf, and their costume is completed by a necklace of dogs' teeth and small pieces of bone, such treasures as a savage prizes.

Despite the natural ferocity of the Tugeri, the tribe is not without some rudimentary notions of courtesy, and they paid the Dutch on their arrival a similar compliment to that paid to Captain Cook, that is to

A FEATHERED ARTIST, THE BOWER-BIRD, WITH HIS HOUSE AND GARDEN.

He distinguishes between colours, lays out his garden in alternate rows of white and mauve flowers.

say, they were good enough to offer to provide wives for the sailors from among their own women. Certain traders in British New Guinea are not above accepting this civility, for the possession of a native woman is often a valuable business asset. Some sandalwood cutters, for example, frequently make these left-handed marriages, for the mistress is influential in obtaining workers for her husband from among her own people. One sandalwood cutter, a Malay, who has made a large fortune at his trade, could always obtain double the number of labourers procurable by any other trader on account of his *liaison* with a native woman, by whom he has a large family. His numerous Papuan blood-relations stand him in good stead in his business.

The houses of the Tugeri are built of grass and bamboo. The walls rise to a height of about ten feet and are covered with a span roof. I observed their villages only from a distance, however, and never accompanied the Dutch soldiers on any of their expeditions. Some of the villages are very large, consisting of two or three hundred houses. Near the townships immense cocoanut plantations invariably occur, and these seem to form the chief wealth of the Tugeri.

A strange part of the Tugeri's paraphernalia was their extraordinary drums. The body of these, shaped like a dice-box, was hewn out of a solid log, hollowed, and curiously carved. Midway at the narrowest point was a clumsy handle, also hewn from the log. The drum heads are of lizard skin. The performer carries the instrument by the handle in the left hand, and beats with his right. The noise is prodigious.

The tribe domesticates the gaura. This bird has

frequently been described by naturalists, but a short account of it may not be inopportune here, as I was fortunate in obtaining many good specimens of it. The gaura is half as large again as the guinea-fowl, and weighs from five to ten pounds. The beak is longer than that of the ordinary pigeon, but is not large in proportion to the bird. It has the ordinary characteristics of the pigeon beak. The head is small, the neck short, the body full and fleshy, and remarkably fine eating. The back is broad and rounded, the legs brightish red and characteristically those of the pigeon breed. The plumage of the head is a bluish silver grey with a fine crest of a lighter shade. The crest feathers are very open in their branching. When erected, the crest spreads out like a fan and makes a noble display. The breast feathers are a rich maroon, the wings and back a bluish slate colour. There are white patches on the wings, which are tipped with maroon. The tail feathers continue the shade of the back until within two inches of the extremity, when they are graduated into a lovely grey, almost matching that of the crest. For all its fine looks it is a silly bird, short and heavy of flight, and easily killed when once found. The sportsman locates the gaura by its booming sound.

My ten days' stay at Merauke was a time of strange misfortune, and while there I had the unenviable opportunity of observing a very serious outbreak of a mysterious disease, which was said to be that deadly beri-beri, which has lately been occupying the minds of men of science. For some time there had been isolated cases among the Javanese convicts, but about

the second week in April the Dutch authorities became greatly alarmed by the spread of the disease. Cases were reported daily, and all proved fatal. At last the deaths reached the terrible figure of 160 in ten days. The victims were all Javanese, the officials and natives went unscathed. The doctors of the Dutch Colony were very able men, but no relief could be given to the patient beyond administering anæsthetics. I question whether it was rightly styled beri-beri, for in South America, at Manaos on the Rio Negro, I have seen cases of the disease among the Portuguese rubber gatherers, but these bore no resemblance to the sickness at Merauke. The sufferers in South America were generally men who led isolated lives in the vast forests of the Amazons, gathering the sap of the *hevea braziliensis*, and living for long periods on bad food. Victims of this type of beri-beri generally live for nine months, and those of strong constitution and in whom the swelling had not risen above the knees recovered. If the patient lives the old life and continues the old diet in the forest, the disease gradually ascends until it gets above the knees, and then its course becomes very rapid until it reaches the heart.

I myself caught beri-beri on the Rio Branco, and first noted its presence by the discovery of a numb spot about the size of a halfpenny on each ankle. The Brazilian medical men assured me that nowhere in South America could I hope to get better, and I was ordered to quit the country at once. Before I reached Havre the numbness was greatly reduced, the affected patch being then the size of a farthing, and two months after I reached home, it vanished. In

Columbia I have observed exactly the same form of the disease as on the Amazons.

In Merauke, however, sufferers from the so-called beri-beri had no seizure of paralysis in the lower extremities. It was always in the abdomen, and was accompanied by the most excruciating agony. Death usually came in four hours. There was no relief from pain; the intestines seemed to be knotted, the patient's face was pale and agonised. He continually moaned, strained forward and doubled his body. He held his stomach with both hands, and occasionally lay down and rolled, and as the end approached, the intestines seemed to be forced upwards towards the thorax, and there was great swelling. The doctors tried poultices and fomentations in vain. They also administered castor oil without affording any alleviation of the suffering. Perfect consciousness remained until the very end, and the last thing the patient always asked for was fruit. Five minutes after making this request, he was dead.

One evening we spent with Mr. Schadee on his verandah, there was with us his Javanese clerk (not a convict), who was enjoying his cigarette and apparently in the best of health. The next morning he was dead. Our carpenter on board the *Van Doorn* was carried off with equal suddenness, and he, curiously enough, had never been on shore all the time of the epidemic. The victims were always buried within five hours. As to the communication of infection, it is doubtful whether the disease was due in each case to external causes, or whether once having broken out it spread from man to man. The

A LAKATOI (SAILING RAFT OF CANOES) AT ANCHOR AND A DWELLING-HOUSE BUILT OVER THE WATER.

bad rice,[1] on which the Javanese live, may have been the cause. At the same time it may be noted, that the convicts were working in the abominable blue mud of the river. Another article of diet supplied to the Javanese was dried fish, very ill cured, or rather not cured at all, and most offensive to European nostrils.

The epidemic was very costly to the Netherlands Government. The *Van Swoll*, a Dutch merchantman, laden with the necessary plant for establishing a settlement, was at that time lying at Merauke. After the beri-beri broke out, there was no labour available to unload the vessel. Mr. Kroesen accordingly decided to ship the surviving convicts on board the *Van Swoll*, and send her back to Amboina. There she placed the convicts in a sanatorium, and went on to Timor to procure a fresh batch of convicts, who were to return with her to Merauke and unload her. The delay to the *Van Swoll* alone cost the Dutch Government 800 guilders a day.

No doubt a settlement in a low miasmatic country is in itself unfavourable, but I am inclined to attribute the disease to bad diet. This so-called beri-beri occurs also in the native princes' prisons in India, where the food is very bad. I am disposed to believe that the Javanese were rendered liable to attack, because their blood had been impoverished by several years of poor feeding before they came to Merauke, and that the climate and worse food than they had had in Java made them ready to receive the germs of the disease.

Such was my visit to Dutch New Guinea. The

[1] Since these lines were written an eminent medical man, a specialist on beri-beri, has publicly advanced this view.—E. A. P.

hostility of the Tugeri and the prevalence of disease rendered scientific work out of the question, and accordingly after ten days I returned to Port Moresby, there to secure means of transport for an expedition into the interior of British New Guinea, where I proposed to continue my studies of the Lepidoptera peculiar to that region.

CHAPTER III

CHANGES AND STRANGE SCENES

We sail to Thursday Island—A Rough Voyage in a Cattle-boat —A Glimpse of Thursday Island—The Wonderful Colour of its Waters—We reach Port Moresby—Contrast to the Scenery of Dutch New Guinea—Magnificent Mountains—Evidences of Drought—Vegetation burnt up—The British Government Post of Port Moresby described—A Good Second to Hades or Aden —The Great Sight of Port Moresby—A Community of Hereditary Potters—The Pottery Trading Fleet—The Strange Vessels called Lakatois—Their Structure—Native Orgies before the Expedition starts—A New Guinea Ballet on Deck—Seclusion of Women after the Young Braves depart with the Fleet—My Inland Expedition fitted out—Official Courtesy—Details of Baggage—Transport procured after Immense Trouble.

CHAPTER III

CHANGES AND STRANGE SCENES

WHILE I lay at Merauke on board the *Van Doorn*, the steamship *Moresby* was signalled. On this I obtained a passage to Port Moresby, the seat of government in British New Guinea, so I accordingly bade farewell to Captain De Jong of the *Van Doorn*, and in due course we weighed anchor for Thursday Island, at which the steamer was to touch on her voyage. The *Moresby* could not approach Merauke nearer than twelve miles, so we went out to her on a small petrol launch. There happened to be a tremendous swell on at the time, and when we came alongside the *Moresby* we found that the deck of the launch was often ten feet from the companion, and we had to watch our opportunity to get on board. It was quite half-an-hour before we succeeded.

We found our steamer by no means attractive. She was most unsavoury on account of the cattle carried for the ship's use. The cabins were below and very hot, for the vessel had been built for a cool climate, and was not at all suited for tropical trade. She was an ordinary cargo boat, and could not usually steam faster than eight knots an hour.

A run of twenty-four hours' duration brought us to Thursday Island, one of the great centres of the pearl fishery, where many nationalities congregate for

the purposes of trade. The stores are kept for the most part by Chinese, and Japanese and Chinese boats call there on their way south to Sydney. The coasters also make it a point of call as they pass from Brisbane and Sydney on their way to the Gulf of Carpentaria and Normanton, the great centre of the Eastern cattle trade.

Thursday Island, so small a dot in the Eastern Archipelago that the tiniest mark a geographer can make on his map is widely out of proportion to its size, rewards the traveller well for a visit. Although one can walk round the island in an hour and a half, the locality is full of interest, and the pearl fishery is very engrossing for the observer. The boats of the fishing fleet afford a most picturesque accessory to the scene, and the harbour is full of life. Small boats dart about everywhere, and there is a continual coming and going. The large Chinese and Japanese steamers, of from 6000 to 7000 tons burden, are continually arriving at and leaving the Government wharf. The Europeans are most agreeable and hospitable. The sea round Thursday Island is a most wonderful colour —in parts emerald green and silver, deep blue varied with light yellow and brown, and everywhere perfectly clear. The tides, which at times flow with the rapidity of a mill-race, have been studied, but are not yet understood. They are tremendously erratic and very dangerous. Sometimes they run at the rate of seven miles an hour, and against this steamers can make no headway. The Torres Straits indeed, as far as Cairns, are the most dangerous seas in the world. It is, of course, very warm in Thursday

MY CINGALESE LIEUTENANT, SAM, AND HIS WIFE AT THEIR HOME IN PORT MORESBY.

Island, but the heat is tempered by the most delightful sea breezes. I could have enjoyed a longer stay than twenty-four hours, but that was the limit of our vessel's call, and we left next day for Port Moresby, which we reached after a two days' run.

As we approached the coast we found that it presented a very striking contrast to that of Dutch New Guinea. Here the mountains came close down to the coast, which was rock-bound, but not cut to sheer cliffs. Inland the mountain ranges ran parallel with the shore line, range towering above range, as far as the eye could see, the whole prospect dominated by the magnificent peak of Mount Victoria, which sprang aloft into the azure to a height of 13,121 feet. Viewed from the sea Mount Victoria appears to culminate in a plateau, but Sir William MacGregor declares that it is really a mass of peaks.

As we drew nearer to the shore we noted unmistakable evidence of the drought, which had just set in, and which lasted for nine whole months. The vegetation was entirely brown, and everything seemed barren and burned up. The drought, it was said, extended as far west as the Fly River, at the 141st degree of longitude. Even at an altitude of 6000 feet, as I found afterwards, lycopodiums, orchids, and parasites were falling off the trees, and this, too, within the zone of humidity for New Guinea.

The approach to Port Moresby is dangerous owing to the reefs that encircle the coast, and accordingly great caution had to be used in navigating the ship into the harbour. The course lies east, then west along a certain known channel, and finally the

navigator follows the coast for a few hours, when, rounding a promontory on his right, he catches his first glimpse of this anchorage. The Government post of Port Moresby, although picturesquely situated among rolling hills which slope down to the water's edge, is in itself unpretentious enough—merely a collection of houses and offices of bare, galvanised iron, architecturally as insignificant as rabbit hutches. During the day the temperature resembles Hades or Aden, whichever may have the priority. Here the British official chooses to abide, although comfortable houses of sago, with thick grass thatch, cool on the hottest day, offering a delightful dwelling-place, might be had only a few miles distant. A paternal administration, however, prescribes galvanised iron, and there its servants swelter, patient and uncomplaining, after the manner of Britons.

Clustered about the Government buildings are various other buildings—the jail, which more resembles a pleasure-ground, shipping offices, stores, and the hotel. On an elevation at the farther end of the bay stands Government House, a pleasantly-situated bungalow raised off the ground on five-foot posts. The best building in the place, as one might expect, is the station of the London Missionary Society.

Life at Port Moresby is not without its events, and one of the most noteworthy of its public spectacles, and one which I was fortunate enough to see on a subsequent visit, is the annual starting of the *lakatois* or huge sailing rafts, laden with pottery for trade in the western part of the possession.

Those who are familiar with the postage-stamp of

British New Guinea must, no doubt, have often wondered what manner of strange craft is depicted thereon. The stamp, as will be seen from the accompanying illustration, bears the representation of a boat, or rather a raft, carrying two gigantic sails resembling the wings of some weird bird, and the whole appearance of the vessel is one that arouses curiosity. This is the *lakatoi*, the remarkable trading vessel of the hereditary potters of Hanuabada, a little village not far from Port Moresby. The hamlet, with its neighbour, Elevada, is built partly on land and partly on piles in the water; but while the land part of Hanuabada stands on the mainland, that part of Elevada which is not aquatic is founded on an island.

The inhabitants belong to the Motu tribe, and their numbers do not exceed 800. Their long grass-thatched huts rise from sixteen to twenty feet above land or water, and each has its little landing-stage on a lower tier. The main poles supporting these structures are of rough-hewn tree trunks driven down into the soft sand. At a height of from five to six feet above the water the natural forks of the main poles are retained, and across these logs are laid, forming a rude platform. Ladders of very irregular construction give access almost at haphazard from stage to stage. Looking through the village below the houses, the eye encounters a perfect forest of poles, and between the dwellings in this queer Venice of the East run little waterways just wide enough to let a canoe pass along without grazing its outriggers. The houses themselves each contain only one living apartment.

In and out among the houses ply the dug-out

canoes, and a very charming feature of the village is its crowd of children, playing with toy *lakatois*. The smallest of these toy craft are made of a section of bamboo ballasted with stones, with a sail of the same shape as that of the great rafts used by the grown-up people. The bigger children, scorning the bamboo vessels, have a larger kind, in which the canoes are real little dug-outs. These youngsters are wonderful swimmers, and as they conduct their little regattas they jump about in the water, swimming and diving fearlessly, and enjoying the merriest possible time. The people of Hanuabada are an agreeable and rather comely race. They are typical south-east coast natives, with shock heads of black wiry hair. The women, who carry on the characteristic industry of the place, the work in earthenware, are lithe picturesque figures in their long *ramis* or kilts of grass.

It is a curious fact that, although the Hanuabada and Elevada people live actually on waters that teem with fish, they are poor fishermen, being, in fact, too lazy to follow that craft. They are accordingly helped in this industry by the Hula people, whose fishing fleet presents at night one of the most weirdly picturesque sights in Papua. Of this I have more to say in a later chapter.

For weeks before the annual trading expedition Hanuabada is full of life. At every turn one comes upon women crouching on the ground, fashioning lumps of clay into the wonderfully perfect pottery for which the village is famous. The men-folk, although they do not condescend to take part in the actual fashioning of the pots, are good enough to dig the

HANUABADA GIRLS DANCING AND SINGING.

Before the young braves sail on their annual pottery trading voyage, which they make on board Lakatois (sailing rafts of canoes), they have great rejoicing, and the young women dance on the decks of their strange-looking vessels.

clay, which they take out of the ground with a stone adze—a flat stone blade lashed to the shorter extremity of a forked stick, the longer extremity forming the handle.

There is a distinct organisation of labour among the potters, the women being divided into "makers" and "bakers." Several "makers" work together in a group. They use no wheel, but seize a lump of clay with both hands, and make a hole large enough to get the right hand in, whereupon they gradually give the vessel its contour. After being roughly shaped, it is smoothed off with flat sticks or the palm of the hand. The finished article of Hanuabada ware is in the form of a flattened sphere with a very wide mouth, and a neatly finished rim six or eight inches across. Farther to the east, along the coast, the pottery is highly decorated, but it is much more crude in form, and has no fine rim. The pots are dried in the sun for several days, and then they are turned over to the "bakers," whose fires are blazing in every street. There are two methods of baking. One is to lay the pot on a heap of hot ashes; the other to build the fire right round it. The vessel is watched through the whole process, and is continually turned on the fire with a little stick thrust into the mouth.

When many hundreds of pots have been completed, the Hanuabada people begin to think about the disposal of their wares. Their great market is at Paruru, a long way up the coast. They barter their pottery for sago with the nations of that district, and it is very curious to note that this extensive trading organisation on the part of an utterly savage people has been

in existence from time immemorial, and is no imitation of European methods. To reach Paruru the potters must undertake a perilous voyage, for which they are dependent on the tail of the south-east monsoon.

Then comes the preparation of the craft, the *lakatois*. Several hundred large dug-out canoes are brought together, and are moored side by side at the landing stages in groups of six or ten. While this is being done many people are out in the forest cutting rattans and bamboos for lashing the dug-outs together, and for the upper framework of the rafts. Across the canoes, after they have been ranged at the proper distance (amidships, about six inches apart, although their taper ends cause a wider gap at bow and stern), are placed long bamboos, extending a considerable distance beyond the port and starboard sides of the outermost pair. Along the gunwales of each canoe, at regular intervals, stout bamboo uprights are erected, and to these the horizontal cross bamboos are strongly lashed with fibre and cane, until the whole framework is perfectly rigid. To the cross framework the potters fix down a floor of split bamboo, and all round the outer edges they wreathe dried grass to prevent slipping as one steps on board. This platform overlaps all round the raft fore and aft, and the cross pieces are very strong and firmly lashed. Openings are left in the floor above each dug-out to enable the pottery to be stored in the holds of the canoes. A clear space is left on the platform, extending about six feet from bow and stern, and on the whole of the intervening space houses are erected in skeleton bamboo framework. These can

be entirely covered in with mats to afford a shelter in stormy weather or in rain. The roofs as well as the sides are formed of mats. Wooden masts are now stepped amidships and held in place with stout stays of fibre, and then the *lakatoi* is ready to receive its sails. These resemble vast kites, and were formerly made of native matting stretched upon an outer frame of bamboo, but are now made of calico. It is difficult to describe their form, and they can best be understood by a study of the accompanying illustration.

Why the strange segment should be cut out of the upper part, leaving two great wings, I have never been able to discover. The sails of the *lakatoi* are of themselves—things apart. Being stretched on a frame they cannot bulge, but swing like boards. Their points rest on the deck and work freely in a socket. The sails are hung lightly to the masts by braces, and there is no clewing up. In spite of their comparative rigidity they are quite manageable, and in case of sudden squalls can easily be let go. The *lakatoi* is now ready for use—perhaps the most remarkable-looking craft that ever went to sea—and has only to be tested. From the rigging and the sails float long streamers of Papuan grass decorations, and the fleet of eight or ten *lakatois* now lying off Hanuabada affords, as the sun strikes the brown sails, a really charming spectacle.

Before they proceed to sea the careful people institute a trial trip, and celebrate a regatta with several days of extraordinary festivity. The fleet is sometimes augmented by some *lakatois* from other

villages. These sail up to Port Moresby from the east to join the main expedition. About eleven o'clock in the morning, if the wind be strong enough, the people of Hanuabada and Elevada begin to test each vessel in the harbour, trying how the ropes run, how the sails work, and how the lashings hold together. Everything is thoroughly overhauled, for the lives of the men folk of the village depend upon the fitness of their queer craft. The crew go on board and take up their positions. At the bow stands the professional pilot, a man thoroughly acquainted with the coast, and behind him, stretching in Indian file down the gunwale on port and starboard, stand his crew, each man handling a long pole. The steering is done from behind with two poles slightly flattened at the ends, and forward, for certain emergencies, they use a small Chinese sweep. The crew pole gently out from land until the breeze strikes the sails, and then far away they go merrily down the harbour, tacking about in every direction with wonderful dexterity, for the *lakatois*, clumsy although they appear, are quick "in stays."

At last comes the day when the Hanuabada people say, "If the wind is favourable, we will start to-morrow." Vast quantities of farinaceous food are brought on board, and the small dug-outs are busy darting out from the village to the fleet, bearing the stores that are to last the voyagers for their two months' trip. Then the festivities begin. The damsels of the village deck themselves most artistically with finely woven garlands that lie in close cinctures round their brows. In most ravishing

GIRLS DANCING ON A LAKATOI (A RAFT OF CANOES).

ramis they go on board and celebrate the departure of the young braves by the wildest dances on the platforms fore and aft—dances that would put a *première danseuse* to shame. They spin round with such dizzying rapidity that, when I photographed them, although I used a shutter snapping at a hundredth of a second, the image of the dancers was somewhat blurred, as will be seen from the annexed picture. As an accompaniment to the dances, they sing the appalling and discordant songs of the coast native, and the merriment and motion cease only for the intervals of feasting on yams, taro, and fish. The dancing is for the most part independent, but occasionally there is some attempt at rudimentary figures, and the little girls, with arms interlaced after the manner of a "lady's chain" in the Lancers, form a ring in the centre, while the bigger girls circle around.

Some of the young braves sleep on board the last night, and the next day at dawn, if the wind should be favourable, a start is made. The last good-byes are said, the small canoes dart to and from the shore with final messages, and as the great *lakatois* slowly get under way, the girls crowd upon the beach, shouting and waving to their young heroes, until the last odd-shaped sail has disappeared round the farthest promontory. The men of the village will not be seen again for two months, and some perhaps not at all, for the voyage is long and beset with divers perils, and not every *lakatoi* weathers the sudden treacherous squalls and storms of the Papuan coast.

Their captains, of course, have no knowledge what-

ever of the science of navigation, and sail their vessels by cross bearings, or—when out of sight of land—by sheer instinct.

During the whole time that the traders are absent, gloom reigns in Hanuabada. At nightfall the desolate women bar themselves into their houses, and remain in the most jealous seclusion until the daylight reappears. It is a most unflattering reflection that this custom has only arisen since Europeans first came to Papua.

From Port Moresby I intended to go sixty miles westward to Yule Island, and thence push into the interior of British New Guinea, where I proposed to pursue the special scientific work for which my expedition had been undertaken. The point which I intended to use as my centre of operations would require a journey up country of at least three weeks' duration, through an almost unknown region, where only native paths existed, or, at the best, a missionary road extending for a short distance. Wheeled traffic was, of course, impossible, and everything would have to be transported by carriers. The first necessity was, therefore, to procure transport, a work of infinite difficulty; but at last, chiefly through the great assistance and courtesy of Mr. Hislop, then resident magistrate of the district of Mekeo, sixty miles west of Port Moresby, I obtained a sufficient number of carriers. Mr. Hislop then took the trouble to go as far inland with me as our first halting-place, Epa, in order to help me and to use his influence to persuade the natives to give me their services. The gross weight of the baggage to be carried must have been, at least,

2000 lbs., and it consisted first and foremost of what is technically known as "trade," that is, beads, axes, 18-inch knives, 9-inch knives, 6-inch knives, tobacco, looking-glasses, red calico, bright-coloured cotton prints, plane-irons for axe-heads, Jew's-harps—for which a Papuan will do almost anything—and, most valued of all, dogs' teeth. In addition to this, I had to carry the whole of my apparatus for collecting—100 nets, 60 to 70 cyanide bottles and enough cyanide of potassium to poison the whole population of New Guinea, store boxes, pins, cork bungs, and lamps. I had also a complete photographic equipment.

For our own sustenance we carried a great quantity of tinned provisions, and enough rice to feed our carriers for the journey both ways. I ought not to omit to mention our tents, another heavy item of transport. For arms we had our 12-bores, our revolvers, one Winchester repeating rifle, and one Winchester repeating shot-gun, with sufficient ammunition. We also carried a store of empty cartridge cases, recappers, loose powder, shot, and caps, extractors and refillers. Before setting out it was necessary to make bags of stout canvas, sewn with twine and fortified with two coats of paint. Into these all our baggage was packed, and each bundle was duly numbered.

CHAPTER IV

WE STRIKE INLAND

We start Inland—Friendly Natives but Hostile Mosquitoes—Bioto Creek—Bioto—Guest Houses—A Splendid Game Region—Daily Migration of Flocks of Pigeons—Greedy Coast Natives—Carriers Inadequate—A Double Journey in Relays—We meet the Chief Mavai, a great Papuan Character—Mavai's Way of Life—His Harem—His Western Notions—His Trousers—His Red Coat—His Severe Discipline—As we proceed, Construction of Native Houses more elaborate—On to Ekeikei and Dinawa—March through Wet Vegetation—Tortured by Leeches and an Abominable Parasite, the Scrub-Itch—A Gloomy Forest—Magnificent Orchids—Carriers stimulate Laggard Comrades with Nettles—The Aculama River—I discover a New Fish.

CHAPTER IV

WE STRIKE INLAND

We left Yule Island at 10 A.M. in a small boat, accompanied by two Mission Fathers. Our baggage came on with us at the same time in a rough boat. We reached the mouth of the river at noon, and found some natives there fishing. They were very friendly and gave us some fish. At that point the entrance to the river was about half a mile broad, but across it there was a big bar. At 2 P.M. we had entered the Bioto Creek, where we suffered tremendously from mosquitoes. Here, in fact, they are quite a terror, and this is believed to be the very worst place for mosquitoes in all New Guinea. During the first night that we halted there I had not fixed my net properly, so I slept very little owing to the annoyance of these insects. It is an unhealthy spot, and fever rages. The village is very small, containing only nineteen houses for the regular inhabitants, and two houses, one at each end, for visitors. This provision for the stranger within their gates is a general custom in every Papuan village. Despite this form of hospitality, however, the Bioto people are not very amiable, and I found them extremely greedy. The region is a perfect one for game, especially for duck and pigeon. Every evening one sees clouds of pigeons flying over the sea from the mainland to

Pigeon Island. In the morning they return. This migration is to secure safety, as Pigeon Island is uninhabited, and in its mangrove swamps the birds know that they can sleep unmolested. After a night's rest, such as it was, we prepared to start again, but found the natives somewhat unwilling to go on. At length they agreed to take us by canoe as far as the path to Epa, about ten miles from the Bioto Creek, and from that place they would take us five miles by road to Jack's camp, which was six miles distant from Epa. For this journey they demanded an absurd price—each carrier wanted a 16-inch knife, a tomahawk, or a pearl-shell—and in this extravagant rating of their services they showed themselves typical coast natives. The mountain people would have done the same work for one stick of tobacco. Before we had come to terms the day had worn away, and it was necessary to remain another night at Bioto. Next morning we were up early, and by the time we had breakfasted, the carriers, fifteen in all, who had come from their gardens the night before, were ready to take up their burdens. The number available was still inadequate, but as no more were to be had we had to make up our minds to a double journey. We stayed the night at Jack's camp, sending on a messenger to Epa to ask the chief Mavai to bring his people down the next day. By ten o'clock the next morning Mavai had not arrived, so we decided to walk to Epa and see him, at the same time hoping that we might meet him by the way. We took Sam (my Cingalese servant) with us, and as there were two tracks, he took one and I the

EPA VILLAGE, MAVAI'S CAPITAL.

other, each arranging to fire a gun if either should meet Mavai. As it happened we met Mavai most opportunely just where the two tracks met, and Sam, who had only gone a few yards, was with us in a minute. Mavai explained that, as it was already late in the day, he would not call his people together, but would make arrangements for them to carry for us on the following day.

Mavai, the chief of Epa, is a magnificent autocrat, and is proud to be the white man's friend. He was credited with powers of sorcery—hence his extraordinary influence. He overshadowed me with his favour, and commanded his entire village to "carry for Parki"—the Epan attempt to pronounce my name. Thus I obtained the force I required to take me onwards, and I went, one might almost say, on the shoulders of Epa—men, women, and children. The chief himself shouldered a load, without loss of dignity, and with great advantage to his royal pocket.

My princely benefactor was no ordinary man. He stood about six feet high. His features were of Roman type, his bearing active and alert, his frame strong and wiry. Keen eyes looked out of a dark copper-coloured visage, which gained by contrast with a scarlet coat—a discarded British uniform, his only ceremonial garment, donned on occasions of great gravity. Such an occasion was the issuing of his command to carry for me. With due ceremony he mounted a platform erected near his house, and assuming the red coat he addressed his assembled people with magnificent oratory, emphasising his speech by actions. Mavai is a strict disciplinarian,

and I have seen him administer personal chastisement to recalcitrant villagers. He is a mighty hunter, a fact attested by his crushed right hand, which was maimed by a bite from a wild pig. Our friend is a great polygamist, and formerly had fifteen wives. When we were there at Epa he possessed only five, to whom he was extremely kind, although he made them work pretty hard. One of them was specially appointed to wait upon her lord at his meals. On the death of another he was deeply affected, and cut off his mop of hair. He kept up considerable state, and at meal-times sat in his house in a different apartment from that in which he slept. He was not above taking food with us, and used to ask for tobacco in a very lordly way. He smoked a European pipe, of which he was particularly proud, and when it was between his lips he used to touch the bowl consequentially and say, "Parki," thus signifying to me that he was no small beer. He would pay the deepest attention throughout a long story, looking steadily at you, and when you had finished he would tell you what he thought, giving elaborate reasons. In the centre of his house hung a hurricane lamp, which he had got from Jack Exton, the sandalwood trader. He understood the working of the lamp quite well, and kept a supply of kerosene in the house in a tin. He was also indebted to Mr. Exton for a further adjunct of civilisation, viz. a pair of trousers very unfashionably big at the knee. His Highness used European spoons, forks, and knives.

Mavai had adopted a coloured orphan, whom he

kept under very strict discipline. This youth refused to go with Sam to Oo-fa-fa, and when the chief found out that his express orders had been disobeyed, he cut off a stick and thrashed the boy indoors for all he was worth. The boy received ten cuts, but neither moved nor howled, although the women of the village set up a dolorous wailing while the punishment was going on. As soon as the castigation was finished, Mavai seemed to be seized with sudden shamefacedness, for he ran at top speed to his sago plantation, and remained in retirement for a considerable time.

At Epa the native houses begin to be beautifully constructed. They are on a raised platform, and look like inverted boats, the roof being formed by bending over long sticks, so as to form an arch that is thatched with sago leaf. The floor is particularly good, and at Epa there is an admirable guest-house, with a fine level floor of split sago, the pieces being 1½ inches wide, neatly laid and bound together.

Mavai's guest-house, which adjoined his dwelling-house, was open at both ends. The house poles are very substantial, for they are driven into the iron ground, which is very stony, and radiated great heat, so that one could not go comfortably without boots, although in this respect the natives seem to be pachydermatous.

We saw Mavai's son build a house, neither asking nor requiring assistance. Single-handed he brought up his poles, peeled off the bark, and drove them in.

One evening during our stay there was a terrific wind storm, a heavy north-wester, which tried the architecture of Epa severely. One slender house

began to heel over, and it was accordingly tied to a tree with strands of cane, and a large gang of men held these stays until the worst of the storm was passed. Even Mavai's substantial house gave way a little under the tempest.

It was about 9.50 when we started on our journey from Epa to Ekeikei. We sent twenty-five carriers on with their loads, and we ourselves followed with the remainder of the baggage. Of course we could not carry everything on this trip, and it was my intention, when we finally reached our destination at Dinawa, to send back mountain men to bring the rest of the material up the forty miles' tramp from Epa.

At first the path led downwards, and very soon we came to a small river, over which—as the existing bamboo bridge was unsafe owing to a freshet—we had to be carried by the natives. We always took great care to avoid, as far as possible, getting our clothes wet, as this accident renders the European traveller particularly liable to fever. In this case, however, this precaution proved futile, owing to the oncoming of a downpour of rain—the last we were to see for nine months.

At times the brushwood was very dense, and we had to cut our way, but where the forest was closely matted above, forming a thick canopy which excluded the light, nothing, of course, could grow beneath. At points where the light penetrated, the undergrowth was immediately thick again. The path, such as it was, was stony and hard. As we trudged along in the wet, we made the acquaintance of a new discom-

EKEIKEI NATIVES.

fort. This manifested itself in the presence of a leech, a little creature about ¾-inch long, with a slender body, very much smaller than the European variety, but inflicting the same sort of three-cornered bite. The native carriers offer the easiest victims, for the leeches fasten upon their bare heels in great numbers, and they had constantly to stop and brush them off with little switches which they carried in their hands. Sometimes, when the leeches had bitten very deep, the carriers had to lay down their loads and pull them off with their fingers. They would endure them until they became too bad, say, when a dozen or so had adhered to each foot. At this time we did not suffer much, but later on, in the journey from Faula to Mafulu, they got over the tops of our boots and socks and attacked our ankles. The bite was not actually painful, and the presence of our enemy was not revealed until we realised that our feet were wet with blood. The chief haunts of the leech are wet stones and moss and low herbage.

Another discomfort which we experienced at this point of our journey was the abominable attack of the scrub-itch, a nasty little parasite that the wayfarer brushes from the low herbage as he moves along. This hateful microscopic creature, which is of a bright red colour, gets under the skin and causes terrible irritation. The affection spreads, and if one is so unwise as to scratch the place, there is no hope of relief for at least three weeks. The only satisfactory remedy is to bathe the part in warm salt and water. Scrub-itch, leeches, and mosquitoes at times render life in the forest anything

but blissful, yet Nature, according to her law, offers her compensations, even in the primeval forest.

About the elevation that we were traversing there grows a particular kind of palm, peculiarly grateful to the native when he is hungry—a not infrequent occurrence—and at such moments of stress they discard their loads, search out this palm and cut it down. At the top, just below the crown of the palm, the last shoot, about six feet long, remains green. It is opened lengthways, and is peeled until the inside layers are reached. These layers are straw-coloured, like asparagus, and to the taste are sweet, slightly dashed with acid. Europeans, as well as natives, can eat great quantities of this wholesome and enjoyable food with impunity. It is excellent also for quenching thirst, for which it is often most convenient, as it grows in waterless regions.

The gloom of the forest was diversified by the colours of its extraordinary orchids. One of these (*grammatophyllum speciosum*), which had made its home on a lofty tree, was of almost incredible luxuriance, and could the whole plant have been secured, it would not have weighed less than half a ton. I despatched one of my native boys to climb the tree to see if he could secure a specimen. He went about his task in the native fashion. The climber stands with his face to the trunk, which, as well as his body, is encircled with a hoop of rattan cane. This hoop he holds in each hand, and his ankles are tied together. First, he leans back until his body has purchase on the hoop, and then at that moment, by the leverage of his ankles, he makes an upward

movement of about a foot. Then, falling backwards against the hoop, and pressing his feet against the trunk, he is supported for the next spring. This operation is repeated with marvellous dexterity and rapidity, and with this contrivance the youth makes his way to the top. There is no tree in New Guinea that a native cannot climb thus.

In the present instance, my man was not destined to have any luck, for the network of roots round the tree formed such a wide-spreading dome that he could not make his way over to the crown to secure a specimen of the orchid, and the attempt had accordingly to be abandoned.

We pressed on along the rough track, which was everywhere beset with precipices and ravines that compelled us to take the greatest care. The road was fairly practicable, however, for transit, and there were no very serious obstructions at this stage of the journey. My people were in good spirits, and we plodded on as gaily as might be, occasionally stopping and giving the men a smoke. Despite the toils of the road, these halts in the forest were perfectly delightful, for we had in the improvement of the air a foretaste of the pleasant freshness that was to make life in the mountains of New Guinea so tolerable and even attractive.

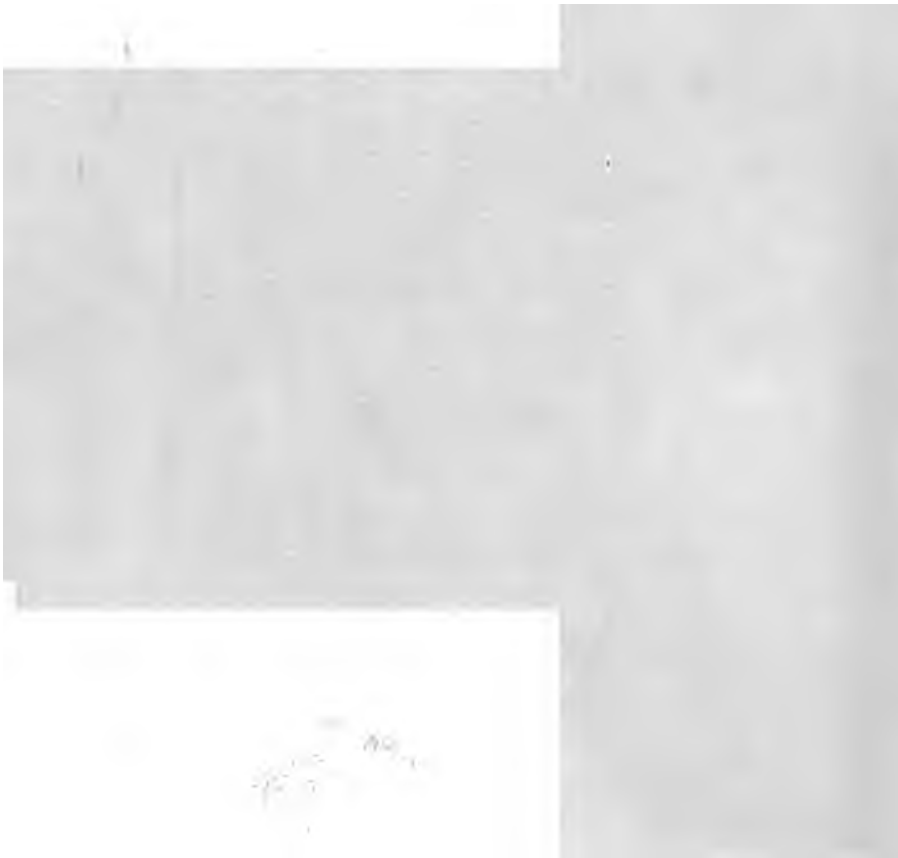
After five hours' march we arrived at Ekeikei, rather tired and ready for slumber, but here, alas! there was no rest for us. The native carriers had to lodge, some in our hut, some under it, and their method of spending the night was not favourable to repose. Their idea is to sleep for half-an-hour, and

then light their pipes and spin yarns, which, to judge by their uproarious laughter, must have been extremely diverting. After the story-telling, they obliged us with songs, and the music wooed them again to a brief period of slumber. It did not woo us, for the coast natives have no ear, and their music is very unlike the soft and flowing song of the mountaineers. This performance went on until daybreak, when we rose. In order to make a satisfactory day's journey it was necessary to start at 5 A.M. We had to prepare our own breakfast and give the natives theirs, and then we set out for Madni.

Again, the path wound past high precipices and deep ravines until we came to our first resting-place, Bamboo Camp, so called from a clump of bamboo that formed a natural shelter. Here the forest trees were so high and thick that scarcely any sun or light could penetrate. It was gloomy in the extreme, and very depressing, the silence broken only by the drip, drip of the rain, and the only sound of life was the "wauk," "wauk" of the bird of paradise.

For two hours the track skirted the Deeanay precipice, and our way led under enormous overhanging boulders which would reach out some distance overhead. These were the more impressive in that they seemed to have no hold, and the imagination made teasing suggestions as to what would happen if one of them were to topple over. From the crevices little springs issued, and in these damp nooks there was a luxuriant growth of lichens and begonias in flower. While accomplishing the long circumvention of the crags, it was impossible to obtain a view of

THE CAMP AT EKEIKEI.



the Deeanay, but as we broke out into more open forest, close to Madui, one could form some idea of its rocky magnificence.

Close to the Deeanay precipice we noted an extraordinary sight. Under a large tree that rose to a height of some 150 feet, were huge mounds, quite five feet high, of veritable sawdust, that seemed to proclaim the presence of man. On a nearer approach the wonder became greater, for the heaps were being continually augmented by a constant rain of sawdust of different grains, some finer than others. No human sawyer, of course, was there, but the tree, to a height of at least 100 feet, was riddled by coleopterous larvæ. Several families of these were represented. The tree, which was about five feet in diameter, and had a thin bark, was, as might be expected, dying. It must have possessed some strange attraction, for it was most unusual in New Guinea to find beetles thus congregated. The distribution is usually very scattered. The holes were probably made at first by small beetles of various families, but chiefly anobiadæ, followed as a rule by brenthidæ, later probably by longicorniæ. One species follows the other into the same hole, each succeeding species bigger than its predecessor. Sometimes the lepidoptera make borings, but this sawdust was much finer. Only a few living branches remained on the tree, which was a mere shell. It was, however, so well protected from winds that it still stood. Close by we saw a native hut, uninhabited, of very rude construction. This point of our journeyings is otherwise memorable, for it was here, near a creek, that we found some of our finest butterflies—

lycenidæ, papiliosidæ, satyridæ, and ornithoptera primus.

We were glad to continue the ascent to Madui, where once more we emerged into the welcome light of the sun. When we were two hours' distance from Madui, one of our carriers struck work and refused to go any farther. There was only one way of persuasion, to which I was greatly averse, but his comrades considered it necessary, and their method, which was, after all, not very harsh, had the desired effect. The other carriers picked the leaves of a gigantic nettle, and with these they gently whipped the reluctant one until he was fain to "jog on the footpath way, and merrily hent the stile a'." A little later, he tried to desert, but his comrades brought him back, and when we halted he was kept in the centre of the camp under strict surveillance. When he had had a good rest and a hearty meal, however, he went on as cheerfully as the others.

We reached the foot of Madui Hill at 3.30 P.M., and a climb of half-an-hour brought us to the summit, which commands a fine view. On a clear day Hall Sound is visible on the coast side, and inland there is a grand prospect of mountain scenery. All the way up it had rained incessantly, and we were drenched to the skin. Our journey over rocks and precipices, watercourses and ravines, had completely tired us out, and, fortunately, the natives were too fatigued to sing. Accordingly, we contrived to get a good night's rest, and did not leave Madui until 9.25 A.M. next day.

Getting under weigh again, we descended from Madui into a ravine, where we passed a delightful

THE RETURN OF MY COLLECTORS WITH BIRDS OF PARADISE AFTER A FEW HOURS' SHOOTING AT EKEIKEI.

waterfall, far away up on the precipices of the river Aculama, which we were to know better during our stay in New Guinea. The waterfall was on one of the tributaries of a little river, which we could see far below us rushing over its rocky bed in small cataracts that alternated with still blue pools. The trees in the ravine were loaded with lycopodiums and ferns, and, in their season, a few rhododendrons. The cluster of flowers was like a golden ball the size of a man's head. On a later journey I secured the root, but it died before I could get it down to the coast for shipment. These rhododendrons did not grow alone, but attached themselves to tree trunks.

Another curiosity of the Aculama was a large fresh-water prawn, of which I got wind from the natives' talk. As soon as I heard it mentioned, I told my boys that if they could bring me a specimen I would pay well for it, and also for examples of the fish of the Aculama. They accordingly went in quest of the crustacean, and before long they brought me a specimen. The prawn haunts the eddies under the large boulders, around which the natives draw their net so as to lie close to the shape of the stone. They then pull it out of the water gradually, and occasionally find that they have caught one or two specimens. The variety is about 5 inches long, of a transparent brown when caught, very much like our British prawns, and when cooked of a rich red. The pincers and legs are longer than those of the marine species. They make delightful morsels, and are a welcome addition to the explorer's larder, which provides changes none too many.

In the waters of the Aculama I had also the good fortune to discover an entirely new fish, the *rhiacichthys Novæ Guineæ*, which has been described by Mr. Boulenger, and I am permitted to print his account in the Appendix.

CHAPTER V

THE FIRST CAMP

Journey continued—A Glorious Scarlet Creeper—Dinawa—Site for Camp selected—Building Camp—Native Assistance—Organisation for Scientific Work—Daily Routine—Teaching the Natives how to Catch and Handle Entomological Specimens—Sudden Affluence leads one of my Native Boys to Desert—He is Caught and Reformed—My best Native Assistant and his Wife—Female Influence a great Asset with other Women—The Day's Work—Collecting at Night—Photography—A Dark Room in the Wilds—Native Interest in Developing.

CHAPTER V

THE FIRST CAMP

To return, however, to our journey. We crossed the Aculama by a missionary bridge, a rough structure made of two trees placed about a couple of feet apart, and laid with cross strips of wood. At once we began our climb to Dinawa up a winding forest path—the last stage of the march which was to bring us to our permanent camp. I was always on the lookout for natural treasures, and when we got to the top of the ridge just beyond the Aculama, I was fortunate enough to see in a ravine just below a magnificent example of D'Alberti's creeper. D'Alberti had discovered it on the Fly River. The one I found here in the mountains was of the variety named *Macuna Bennetti*. It ran up its supporting trunk on a stem which was about 6 inches thick at the base. At the height of 200 feet it found light, threw out slender arms, and then dropped down bunches of festoons 20 feet long, a magnificent blaze of scarlet blossom. The flowers of the *Macuna Bennetti* are distinguished by a calyx covered with short hairs, some short and pliable, a few stiff. When we reached the top of Dinawa Hill we found patches of grass growing, which did not occur anywhere on the lower slopes.

We at once set about selecting a piece of ground

for our camp, and found a level, grassy space, which required only the cutting of a few trees to make it clear enough for our purpose. There was, however, very little brushwood to cut. Pending the building of a more permanent home, we pitched our tent and settled down for the first night at our base of operations. Dinawa village was fifty yards away, and the native men came timidly out to look at us. They were very suspicious, and their womenkind so shy that it was a considerable time before they would venture to approach our camp.

The day after our arrival the carriers went back, and it was to the Papuans of the vicinity that we had to look for the labour that was to build our house. My Cingalese servant, Sam, spoke the language, and he made the overtures to our dusky neighbours. We were careful to let them get some inkling of the "trade" we carried, and this seemed to encourage them to greater boldness. Occasionally we would open a box in front of our visitors and show them an axe or a knife, whereat they would say "lo-pi-ang," that is, "good," the first word, probably, that a European would hear from the lips of a Papuan. A little present of tobacco would help matters greatly, and in return for this the beneficiary would say with the ingratiating guilelessness of a child, "Parki lo-pi-ang" (good Pratt). In time the neighbouring villages, hearing of the vast wealth that had arrived at Dinawa, came in too, and I was able to engage a force of workers, whose numbers varied from ten to fifteen, and who commenced immediately to build my house. These were to be paid when

HILL NATIVES AT DINAWA.

the house was finished; but during the ten days that the building was going on they were given occasional supplies of tobacco as a gratuity. The average wage per day was three sticks of tobacco, or one rami, which would mean about 1¼ yards of scarlet calico. At the end of the time each man was to receive a large 18-inch knife, or an axe, and a certain number of sticks of tobacco.

For our house, we first drove into the ground two stout poles 18 feet apart. These carried the main beam of the roof. At a distance of 6 feet on each side of these poles we placed the corner supports of the house, each 12 feet high. The framework was then joined up with poles of unsplit bamboo tied with split cane, and the framework of the walls consisted of upright pieces of split bamboo set in the ground 1 foot apart. We then wattled these uprights with smaller pieces of split bamboo, the sides and gables of the house forming a complete basket-work. From the ridge-pole we dropped bamboo rafters extending far beyond the walls, so as to give very wide eaves, and throw the drip of the rain as far out as possible. We were now ready to thatch the roof, and for this we required large quantities of grass. The natives by this time had gained sufficient confidence in us to allow their women to work for us, and accordingly I employed ten women as grass-cutters, and kept them for several days at work cutting with 6-inch knives, which we supplied. They had no distance to go to find sufficient grass for our purpose, but the procuring of heavier poles and bamboo was a different matter. The wood had to

be cut at a point some distance down the hill, and it took quite three hours to bring up each of the heavier logs. When the roof was on we nailed down our floor, which was made of bamboo fixed to cross-pieces 6 inches off the ground. The material was not ideal, for the joints were never closed, and small articles used to fall down into the cracks. We made our door frame of axed wood and covered it with thick canvas.

We had also to build our collecting verandah, which we placed on the edge of a precipice not far from the house. It had a 20-foot frontage, and was 12 feet wide, with a division down the centre at the ridge-pole of the roof, which made it, properly speaking, two verandahs placed back to back, so that when the wind was unfavourable on one side, we could find shelter on the other. The whole of the structure was raised off the ground on poles, and the boys had their quarters beneath.

Such was our establishment at Dinawa. When we had finished it we began to settle down, and were able to organise the camp for work. A native boy called Doboi, from near Dinawa village, was engaged as cook, and we had also a water-boy, Matu, whose duty was to go down the hill, a tramp of three-quarters of an hour, to a beautiful spring whence we derived our supply. It was lovely water, for the declivity gave no opportunity for decomposing vegetable matter to collect. The well always ran clear, and, even at the worst part of the drought, did not fail us altogether, although its trickle had sunk to the size of an ordinary lead-pencil, and the boy had

to wait quite a long time before he could fill the billies.

We built our fire outside the house in the open space, gipsy fashion, and hung the billy, in which we did all our cooking, on a stick resting on two forked upright sticks. Gradually our working day fell into a regular routine. We awoke with the dawn, but had always to trust to ourselves to make the first start, as your Papuan will not wake a sleeping man. He has indeed a superstitious awe of the slumberer. If one must be awakened, it must not be by a shake, and when Doboi had advanced far enough to bring us a cup of tea in the morning, he would tread very warily.

When we were fairly astir, we found Doboi already about and the fire going. Then he would make tea while Harry or I baked cakes. The bread rises easily in New Guinea owing to the temperature, and we were never at a loss for yeast; for I had brought with me a small quantity of hops, and we kept our supply going by keeping back a piece of dough from every batch. This fragment, no bigger than a pocket matchbox, we placed in an ordinary pound tin, and by noon it had swelled right over the edges. We breakfasted on bread and dripping of pig, when we had been able to buy one from the natives, and sometimes we substituted coffee for tea. By seven o'clock breakfast was finished, the boys having had theirs under the verandah. It was then time for them to be off to their collecting, but they were difficult to move. They wanted to sit and smoke. Once off, they might do a day's work, but on the other hand

there was just the chance that they would waste their employer's time in the forest, smoking and telling stories; or, if they had killed and caught anything, they would immediately sit down and cook it. If this happened they would come home empty-handed, quite shamelessly, saying "awpapoo achi" (no butterflies).

Each boy was supplied with a large butterfly net and collecting box. In every box we stuck a certain number of pins, and told the boy that if he filled his box with good specimens he would receive a stick of tobacco. Bad specimens I always discarded in the culprit's presence, so that his iniquity might come home to him. I had, of course, to undertake the training of the collectors myself, although Sam helped to explain the method.

First, I got a butterfly and showed how to handle it and pin it sideways into the box. The crucial matter was the seizing of it once it was in the net. It must be carefully taken between finger and thumb and the thorax pinched on the under-side. If it be pinched from above — as every butterfly collector knows—the operator's finger-marks would show on the wings and betray slovenly handling. Some of the boys became very neat-fingered after a time, but others would not learn at all, and were so shameless that they would bring in part of a wing carefully stuck on the pin—in fact, it was "anything to fill your box." Occasionally the less scrupulous would appropriate the pins to their own use. Of course there was nothing for it but to pay off and send away such useless fellows.

DOBOI, OUR NATIVE COOK AT DINAWA.

Making due allowance, however, for the fact that they were savages, the general character of my collectors said a great deal for human nature. Doboi was a really good fellow, and had only one reprehensible escapade to his discredit. It was a case of the deceitfulness of wealth! He had worked extremely well and had amassed a small fortune, a blanket, many ramis, and a quantity of tobacco. With these possessions, he became a small king in his village. One day he vanished with all his goods. Now Doboi was under contract to remain with me while I was in the interior, and although he had received much, he had not really worked off his part of the bargain. Accordingly I had him pursued and brought back, and thereafter for the rest of his time he was a good boy. He was fourteen, but had attained to full manhood, and was a very capable fellow.

My best mountain boy, however, was Ow-bow. He was my right hand, my native first officer. I could send him anywhere, for he was quick and alert, but he always stipulated that he must go armed, and believing him to be justified, I invariably provided him with a weapon. He loved fire-arms passionately, and to see Ow-bow enter a village with his gun over his shoulder was to realise on a small scale what a Roman triumph must have been! He understood the weapon—his fellow-tribesmen did not. Therein lay Ow-bow's power. He would fire a shot in the air and then lay down the law to his comrades. If there were any possibility of getting what you wanted, Ow-bow would get it. He would, indeed, have done well on an American newspaper. He

understood how to make the most of what knowledge he had, and was fully conscious that it gave him superior power, which he was not slow to wield. When he went to a village to recruit carriers, he arrayed himself in his best, donned his finest beads and feathers, and painted his cheeks in scarlet stripes. Thus resplendent, with his gun over his shoulder, he entered the village, strutting consequentially, and immediately made his presence felt. He was a man who would not and could not be refused. He showed his wages and told the tribesmen that they, if they carried for Parki, would become rich in like manner.

More subtle still was his dealing when he had been sent to engage women for grass-cutting or similar employment. Ow-bow was a married man who had permission for his wife to stay in camp with him, and this lady proved his great advocate with her own sex. While Ow-bow waxed eloquent and persuasive with the men, Mrs. Ow-bow would display to the womenkind what wealth had also come to her, and as she reasoned, her sisters were persuaded, and took service with the white man. But Ow-bow's flourishes with the gun were no mere vainglorious show. In two months' time he had become a really good shot, and after a morning's sport would often return to camp with five or six birds. He invariably accounted for his empty cartridges, while other boys would return with spent cases and never a feather to show for them. He grasped the method of aiming at once and never showed any amateurish disposition to squint along the barrel, but got his sights on the

bird neatly and quickly and fired without hesitation. He seldom missed.

During the morning, while the boys were out at work, Harry and I would also be engaged with our nets; or, as our collections increased, we would be busy putting specimens together, tending them and seeing that they were not suffering from damp. Sometimes, taking a couple of the laziest boys with me, I descended to the Aculama and followed the stream up its course, collecting as we went. As the boys' skill increased, it became possible to send them two by two so that several localities could be worked simultaneously. Work, still further afield, fell to Sam, who often went away with five or six carriers on collecting expeditions that lasted a week or a fortnight.

The best time of day for butterflies is from 8 A.M. till noon. The boys returned to camp at times varying according to their luck or their laziness, and in any case, we had all returned by three o'clock. Then Doboi or Weiyah cooked a meal which varied in excellence according to the state of the stores or our luck with the gun, and afterwards we took our siesta. The late afternoon or early evening found us at work again on the collections or putting the camp straight. Darkness descended quickly, and when there was no moon we went to the verandah and began collecting moths. On favourable nights we often continued at work till daybreak.

The boys did not care about night work and usually sat round the camp fire smoking, spinning yarns, or crooning their charmingly plaintive mountain

melodies until about 1 A.M., when they curled up under the verandah and went to sleep. Occasionally one or two very hard-up young gentlemen, whose need of tobacco was urgent, would volunteer to assist in the moth-catching, but for the most part they preferred free evenings like the young working people of more advanced nations. Visitors from Dinawa dropped in until the camp became a thronged resort. Then unfortunately things began to disappear, and it was necessary to keep the natives at a greater distance and restrict liberty of entrance. "No admission except on business" became the rule for outsiders. On my own boys, I found it was best to impose no cast-iron regulations.

Nor were these all our occupations. Besides the lepidoptera, there were ornithological and botanical specimens to collect and preserve. Of the last, the more succulent required constant care and changing, and some took three weeks to dry. Photography proved a pleasant change, and on nights unfavourable for moths, we darkened the house with blankets and had a spell of developing. At such times one realised poignantly the limitations of a savage country, and the value of things that at home are too commonplace to be remarked. Our chief lack was a good flat shelf. Amateur photographers with luxurious equipment should figure to themselves the discomforts of a ridgy shelf of split bamboo on which no bottle will stand upright. Groping in the dim red light among one's materials on that crazy ledge was as productive of maledictions as the royal and ancient game itself.

THE NATIVE VILLAGE OF DINAWA.

The natives were, at first, very much frightened at the camera, the women especially, and some of them were never reconciled to it. I showed them stereoscopic slides of Papuan views on Negretti and Zambra's veroscope. One fellow, on seeing his own portrait stand out in bold relief, dropped the stereoscope and ran up a tree. I occasionally allowed a few privileged natives to come into the dark room to watch the developing. At first they were rather alarmed at the red light, but gradually they became interested in the process, and as the image appeared we heard the inevitable "lo-pi-ang."

Such was our daily life at Dinawa—very enjoyable in the crisp and bracing mountain air that reminded one of an English October. But for the unavoidable cares of camp management and fears for the endurance of our food supply and the safety of our specimens, it would have been altogether ideal.

CHAPTER VI

VICISSITUDES AND A DIGRESSION

The Drought affects our Work—Butterflies begin to Fail—Forest Fires—We descend to the St. Joseph River—A Temporary Camp—A Wonderful Native Suspension Bridge—River Scenery—Native Methods of Fishing—Dull Weather and Little Success in Collecting—A Comic Incident—A Native besieged by a Wild Pig—War—Native Hostility—A Chief threatens to Cook and Eat our Heads—Strict Guard kept on Camp—The Bird of Paradise—Papuan Game Laws—Natives' Interest in Writing—Further Stay at the St. Joseph Impracticable—A Flood destroys our Bridge—A Visit to a Native Village—Curious Means of Ingress—Return to Dinawa—My Cingalese Headman's Experiences—He evades Native Treachery—Sudden Growth of a New Township.

CHAPTER VI

VICISSITUDES AND A DIGRESSION

As the days went on at Dinawa, there was no sign of any breaking up of the great drought, which began seriously to affect the success of our work. Butterflies grew scarce, and daily the catch fell off, for the vegetation was getting very dry. Lycopodiums were dropping off the trees, and often we could see, in the lower grounds, great forest fires, which consumed the undergrowth throughout large tracts of country, miles and miles being left blackened and burnt up. In these conflagrations, millions of low-feeding and high-feeding larvæ must have been destroyed, and there was a corresponding decrease in the insect life of the district. Seeing that, for a time, there was not much more to be done, we decided to quit our camp at Dinawa and descend to the St. Joseph River; so, on July 22, we set out with thirty carriers, and went down into a deep valley, whence we climbed a ridge which brought us to a native village so strongly stockaded that we knew that the tribes must be at war—village against village—and this unsettled state of affairs made it very difficult to persuade the natives to pass with us through the open country that lay between the hamlets.

At this place we changed carriers, and, accompanied by the chief of the village, we descended by an extremely rough native path to the St. Joseph River,

which we reached at 4 P.M., after a march of about six hours. We found the river very low but beautifully limpid and very rapid. For our camp we immediately chose a small patch of sand close to the stream, the only clear space we could find; for the river bed and the gorge itself were filled with enormous boulders piled one upon the other in the wildest confusion.

Our temporary dwellings were of the simplest. Harry and I occupied an ordinary fly-tent, and another was pitched for our native followers. On the day after our arrival we set about constructing a rough bridge for our own convenience. This we did by felling a tree on one side of the stream and letting it fall across the river bed as far as it would go. We repeated the operation with a thinner tree, which we let fall from the opposite bank, and the branches of the two intertwining in the middle, gave the structure some sort of continuity. Along the two trunks we could scramble without any very great difficulty. Our feat of engineering, however, was as nothing compared to the one achieved by our savage neighbours, for at a little distance up the stream the Papuans had spanned the gorge with a most wonderful suspension bridge. Across the ravine they had swung four main chains of bamboo. These were fastened at each end to a rigid horizontal cross-piece, and this again was braced on one side of the river to two trees, of no very great thickness, but of tremendous sustaining power, while on the other the chains were laid over the top of an enormous crag, then across a little depression in the ground behind it, and so were made fast to trees at the height of a few feet from the ground. The four

main chains were under-girt with loops of bamboo, forming a cradle, along the bottom of which single bamboos were laid on end, affording a precarious footway. The total length of the span was at least 150 feet, and it swung clear of the tree-tops on the wooded sides of the gorge. At its greatest dip the bridge must have been 70 feet above the river. The elasticity and swing were tremendous, and I confess that the passage of the bridge was no joke to one unaccustomed to its giddy eccentricities. On this veritable tight-rope custom is everything, for I have seen fifteen native carriers at one time dancing carelessly across it, regardless of their heavy loads and of the tremendous increase in the oscillation that their numbers caused.

I crossed with some natives of the district, and having descended the right bank of the St. Joseph for about a mile, we came to the mouth of a small tributary, the bed of which we ascended for a distance of half a mile. It was a toilsome ascent owing to the enormous boulders, to which I have already alluded, and I found that the safest way was to take off my shoes and stockings and clamber along bare-foot. At intervals among these boulders occurred calm pools of exquisite deep blue water, and these the natives choose as their fishing grounds. They favour the pools with the narrowest outlets, and dam with leaves the little waterfalls or natural weirs over which the water rushes from one clear expanse to another.

My native companions, being very agreeable and obliging fellows, were kind enough to send to their villages for the great fishing nets, 30 yards long and

6 or 7 feet wide. When the nets arrived, the natives collected stones about the size of an orange, wrapped palm leaves round them, and then tied them to the edge of the net, until it was evenly weighted all along, at intervals of about 6 inches. They then lowered their net into the water, so arranging it as to form a half-moon, and, scrambling along the sides of the watercourse, they gradually drew the mesh towards them, until they reached the upper end of the pool, where natives, standing breast-high in the water, landed the fish, as they were pressed towards the bank, in large dip nets. Some of the fish jumped over the net, and some escaped down stream, and even managed to plunge over the weir, for they were strong enough to take a leap of 6 feet. We caught eight beauties, none under 2 lbs. in weight, and some up to 4 lbs. They were, as far as I could make out, a species of fresh-water mullet, and in the main stream of the St. Joseph similar fish, weighing as much as 15 lbs., are no uncommon catch.

These fish are wonderfully provided by Nature with an appliance which helps them to combat the extraordinary current. At one moment you will see them being swept down resistlessly, but suddenly they shoot off into the quieter water and attach themselves to the rocks by a strong sucker near the mouth. There they hang just outside the current, their tails moving gently with the eddy; and when they have recovered their strength, they make another dash through the swifter waters, coming to anchor again when baffled—otherwise it would be impossible for them to stem the stream. The fish we caught that

FISHING WITH HAND-NET ON THE UPPER WATERS OF THE ST. JOSEPH RIVER.

day made a most welcome addition to our larder, as they are delicious eating.

From a scientific point of view we did not gain much by our expedition to the St. Joseph River. Every day the skies were leaden, and during the whole time of our stay we saw no sun. Butterflies were scarcely more plentiful than they had been at Dinawa, and once, after a whole morning's work, Harry had only secured two — fine specimens, no doubt, but even at that an insufficient reward for the time spent. Every night we kept the lamp going, but the moths were very scarce, although our camp was in the heart of the forest.

Our life at St. Joseph River, however, was not to be all tranquillity. Once we had an alarm which fortunately degenerated into an incident of pure comedy, although it might have been very serious. At nightfall, one evening, a native boy, who had gone out shooting, had not returned, and we began to grow very anxious about him. At eight o'clock, however, he came into camp in a state of considerable agitation and bringing a strange tale of a pig. He had shot a tusker with No. 9 shot, but had only wounded it, and the animal charged him, whereupon he had thrown away his gun and run up a tree. Then the pig sat down over against him and laid siege to him, and our poor friend abode in the tree for several hours. Finally, however, the pig's wound, which was over his eye, so blinded him with blood that he raised the siege in disgust and made off to his fastnesses.

As time went on the rumours of war increased, and one day three natives came in from the village of

Mi-Mi, six hours' journey higher up the mountains, on the top of a ridge. They came from the chief of Baw-boi, a fierce warrior, who kept all the small villages round him in abject terror. His emissaries conveyed to me a most agreeable message, that if we and our followers should honour him with a visit at Mi-Mi, he would kill my men, and have the pleasure of cooking and eating our heads—a compliment, presumably, to the superiority of European brains. I had fully intended to visit him, but after this token of cordiality I refrained, so that the menu of the chief of Baw-boi's regal banquet has not yet included the tempting item, "braised brains of Pratt." After the chief's intimation I kept fires going all night at both ends of the camp, but it was not necessary to post a stricter watch than usual, for three or four of my men always kept awake in their hammocks during the dark hours. This precaution is, in fact, so natural to savages that they never need to be reminded of its necessity. We heard that the chief of Baw-boi had placed his village in a complete state of defence, had excavated a trench 18 feet wide all round, and had erected a stockade. The effect of these hostile preparations on the weaker villages round we were to learn later from Sam, who was, at this time, a day's journey higher up the river carrying on collecting work for me.

The days seemed very long from lack of occupation, and the nights also, for we could not sleep for the roar of the St. Joseph River. Occasionally there were amusing incidents. One of my men, Gaberio, had a brilliant inspiration. He thought he would

shoot fish with a rifle, and was allowed to go and try; but not only were they too quick for him, but, of course, the water deflected the ball, and the refraction of light through water makes a true aim impossible. Gaberio, who had no knowledge of natural science, covered his defeat by another excuse—"Water too deep," said Gaberio.

We found here some indication of rudimentary game laws existing among the Papuans. Round this region dwelt certain chiefs, in whose territory grew the play-trees of the *raggiana* or red bird of paradise. These gentlemen intimated to us that any one who came to shoot the *raggiana* must pay them a fee, as the birds, by virtue of their coming to play in their trees, were their property.

As the natives had little to do in camp, they used to sit round Harry, watching him with the greatest interest while he posted his diary, and exclaiming at intervals, "mallelee lo-pi-ang" (good writing). It is most singular that they should have had a word for writing, for I found no trace among them even of picture writing, if we except the markings on the "bau-bau" or pipe; but it is probable that they had some means of communication by scratching on bark, otherwise the existence of the term seems to be inexplicable.

At length I saw that a further stay at the St. Joseph was impracticable. A flood came down and washed away our bridge, and it was with no great reluctance that we struck our camp and returned to Dinawa. On the way we repassed the village of Fa-lo-foida, which stands on the top of a conical hill surrounded

by precipices. It was strongly stockaded, and we had a stiff clamber to get to the top. To enter the stockade we had to pass through the outer native house before gaining access to the centre of the village, a sort of compound. The stockade was closely built, only a few bars being left loose for ingress and egress, and the entrance could easily be shut in case of attack.

A march lasting from 6 A.M. till 12.30 P.M. brought us back to Dinawa, where we found all well and in good order, except our plants and one of the birds. A "magnificent," a really beautiful specimen of that species of paradise bird, which one of my boys had brought in, and which we had hoped to keep in a cage, had died, probably because when its captor brought it into camp he slung it head downwards from a pole, and kept it in that position several hours. We were heartily sorry to lose so fine an example of the *kellelo*, as the Papuans call that variety.

Two days after our return to Dinawa camp, Sam rejoined us. He had much to tell, for the times had been rather stirring with him. My head man as well as I had received the polite attentions of the Baw-boi chieftain, who had sent in to say that he was not afraid of Sam and his gun, and that he would cut off his head and eat him. After this overture Sam was careful to camp at the bottom of the hill, but our adversary did not give up hopes of a Cingalese dinner. A message came from another village that if Sam would go there he would be presented with a pig; but he knew the Papuan too well. He replied to

A ROUGH BRIDGE WE MADE AT THE ST. JOSEPH RIVER.

the messengers that if they had a pig they should bring it into camp. Of course no pig came.

From Sam we learned further that the Fa-lo-foida people, through fear of the Baw-boi people, had cut the suspension bridge, and that the natives farther up the St. Joseph River, on hearing of the tyrant's warlike preparations, had left their villages and had settled on the site of the camp I had just quitted. Their object was, of course, to be near friendly Fa-lo-foida, which would in time of stress be to them as a fenced city. This incident led to the formation of quite a new township, and before I left Dinawa for good my old camp on the St. Joseph had become a considerable village. It was a curious example of the way in which political necessity affected the *locale* of village communities.

CHAPTER VII

GOOD-BYE TO DINAWA

A Beautiful New Orchid discovered and described—Drought continues—Sufferings of the Natives—I practise as a Physician —Queer Native Diagnosis—Gaberio, an Intelligent Native, goes collecting on his own Account—How we kept touch—The Wireless Telegraph of the Wilds—We determine to take our Specimens to the Coast—Methods of Preservation and Packing —Gaberio returns—He tells of the Murder of one of his Boys— Hardships of Camp Life—Food and Ammunition fail—We try Cockatoo Soup—A Visit from a Fine Hill Tribe, the Ibala— They brighten the Last Days of our Stay—Gorgeous Sunsets at Dinawa—The Ibala People return according to Contract to act as Carriers—We depart—Trials of the March to the Coast—A Mishap at Sea—Our Fine Herbarium ruined with Salt Water— Port Moresby once more.

CHAPTER VII

GOOD-BYE TO DINAWA

Among the scientific specimens I brought back to Dinawa was a new *phallonopsis* which I had discovered near Fa-lo-foida as we returned from our camp on the St. Joseph. This orchid is one of the superb treasures that occasionally reward the seeker as he passes through the wilds of New Guinea. It was found growing in the fork of a tree, where it had plenty of shade and a rich damp bed of moss and leaves. The leaves were a very brilliant dark green, and on the spray, which was quite 3 feet long, grew thirty magnificent white flowers of exquisite fragrance. Each specimen must have measured 2½ inches in diameter when the sepals and petals were extended. Its whiteness fulfilled the most rigid canons of the orchid fancier, for in judging orchids there are whites and whites. The value is determined by substance. You may get a white that is very satisfactory, but there is a thick waxiness of blossom that gives to a plant the very highest value, and this delightful specimen was as near the ideal as anything I have ever seen. It had, of course, pseudo-bulbs, and did not live on the tree, which is merely used as a means of support, and the plant draws its nourishment from the humidity of the atmosphere.

GOOD-BYE TO DINAWA

Once more we settled down to the routine life of the camp, but it became plainer every day that, as there was no sign of the drought breaking up, there was very little hope of satisfactory work until another year. The skies were still brazen, and vegetation was failing more and more. The sweet potato crop had utterly failed. Those in store had long been consumed, and the natives were absolutely starving round us. It was no use for them to plant another crop of sweet potatoes [illegible] should come, and they were wandering over the forest seeking what sustenance they could find. Their strength was failing, and their privations were beginning to tell in terrible emaciation. It was painful to see the starving creatures come into camp, most of them mere skin and bone. Their children, of course, felt the pinch hardest, and there were many deaths. To see their condition one could hardly believe that they would ever recover, but they bore it all with a wonderful stoicism. Occasionally they would try to catch a pig in their corrals.

The Dinawa people would also come to me for medicine, and would constitute me their physician for small complaints, such as headache, but I had to be very careful in this respect, for I found out that often they wanted medicine when nothing was the matter. This recalls to me an amusing incident of this period connected with my minor Æsculapian dealings. One morning Doboi, Martu, and Ow-bow came in, saying that Doboi's mother was ill. On being questioned as to her symptoms, they told me that she was aching all over her body, and her head was particularly painful. Beyond these details

NATIVE WOMEN AT DINAWA.

The background is the roof and side of the author's house.

we could not find out anything, and as the woman was some distance off, and it was not convenient to go that day, we gave them a headache compound and sent them off with it. Later in the afternoon the boys returned and told us that Ow-bow's mother was dead, but the tidings were not so alarming as at first appeared; for they added that "her head was dead but her stomach was alive," from which I understood that she was unconscious. The neighbouring Roman Catholic missionary, on hearing this, said that he would go over the following day. These cases were not new to him; in fact, he told us that fainting was quite common. Obviously, the dead head and the live stomach was a simple instance of swooning.

During this time we had permitted our man Gaberio—whom I have already mentioned as being with us at the St. Joseph River—to go off on his own account collecting butterflies and birds. Gaberio was a Papuan whom I had engaged at Port Moresby. He was very intelligent, capable, and quick, and to his other qualities he added a knowledge of pigeon English. I mention him chiefly because the fact of his absence brought home to us with considerable force the value of that extraordinary system of intercommunication prevailing among the Papuans, which may well be called the wireless telegraphy of the wilds. For some time Gaberio was, as one might expect in such a region, entirely beyond our ken, and although we knew he could take care of himself very well, as the days went on, and our departure was approaching, we felt that we should like to have tidings of him.

GOOD-BYE TO DINAWA

One morning, while we were writing home, we heard the natives calling from hill to hill. In that pure air their voices carry magnificently for a great distance, and village answers village with perfect ease from ridge to ridge. A little later the natives came in and told us that Gaberio was at a village called Kea-ka-mana, on the northern slope of the hill beyond us. It appeared that he was coming back by the same route as he had gone, and they told us that he expected to reach camp the next day. We thought at the time that he might go from Kea-ka-mana to the Kebea, but the natives said no, so we surmised that he must have a good collection of butterflies and birds, for he had had fine weather—finer, indeed, than Sam, who after all had got together quite a fine number of specimens. This news set us quite briskly to the work of preparation for our departure, for as soon as Gaberio should have returned we determined to make all speed down to Epa. The next day we were on the look-out for Gaberio, but he did not arrive, so we concluded that he had either gone to the Kebea or was remaining at Kea-ka-mana collecting. We filled up the day with active preparations for breaking up the camp, and, of course, our chief care was our collections.

The first precaution was to take measures for the preservation of our moths and birds, so we made deep trays from the logs we had already sawn and held over from our house-building, each tray being strong enough to resist concussion, for as it would be carelessly carried, swung on a long bamboo, and allowed to dash against trees and other obstacles,

THE WIRELESS TELEGRAPHY OF NEW GUINEA.

The natives shout their news from hill-top to hill-top, thus conveying it with amazing rapidity.

the antennæ and legs of our specimens would be easily jarred, and very probably shaken off. The butterflies did not require such care, for each specimen was wrapped in paper and laid in sago boxes. Inside the wooden cases we placed the moth boxes proper, and in other two cases we laid our birds. Outside everything we pasted paper, treated with arsenic, to keep out insects when we should come to the lower ground, for the tiny ants at Port Moresby are legion and can penetrate the smallest aperture; once the ants enter a naturalist's collection, woe betide it! Our only trouble during these packing operations was that we had not any nails small enough, for the huge ones we had brought from the coast very often split the wood.

During our last fourteen days at Dinawa we had one small gleam of good fortune in our collecting, for, curiously enough, we had quite a run of good nights with the moths. The nights were dark and misty, and we very often had sufficient success to encourage us to remain on the verandah and work until the small hours.

The second morning after the day we had our first news of Gaberio there was more calling, and shortly we heard that our follower was still at Kea-ka-mana, and that he had after all decided to go to the Kebea, and would return that way. The next day, while we were hard at work on our packing, we heard that Gaberio was on the Kebea—very pleasant news—for he was right in the heart of the best locality for the blue bird of paradise and for *heterocera*. There was another reason why this news was encouraging, and

that was that a native feast was pending at Kea-ka-mana, and we had feared that Gaberio might be tempted to waste his time there in savage orgies. According to the latest intelligence, Gaberio would still be absent four or five days, and as he was in such a fine collecting country we hoped he would stay out to the end of his tether. Gaberio, however, did not fulfil our expectations in this respect, for the next day, shortly after noon, we heard that he was not at the Kebea at all, but that he was approaching the village on the ridge opposite, about 500 or 600 feet above Dinawa. Three hours later the intelligence department lied. It announced that Gaberio was at hand, the fiction being invented, no doubt, out of the savage's fondness for creating a little pleasurable expectation. Unconsciously, however, Gaberio himself disproved the story, for we heard his gun far away on the heights, and we were able to locate him. Before nightfall we knew that he was really at the village first mentioned, for we could clearly distinguish his tent.

The next morning, September 21, both Harry and I slept late, for we had had an extremely heavy day. While we were still in bed we heard a shot from Gaberio, whom we welcomed back about eleven o'clock. He brought a really good collection, which included three blue birds of paradise and four long-tails. Gaberio's news, however, was not all good, for he had to report that one of his boys had been murdered. Whether the chief of Baw-boi had a hand in it, or whether there was a private reason for the crime, I cannot say. It was not on the Baw-boi side of the

river, so perhaps if it was not fortune of war it may have been misfortune of love, for the eternal feminine is as potent in Papua for evil as she has been in other lands since Eden or Troy was lost. Be that as it may, the lad, a carrier from the village of Kowaka, about a day's journey from Dinawa, went out from camp at Ta-poo-a one night into the forest, and there the adversary overtook him. It is probable that he was laid wait for, or he may merely have fallen to the spear of some wandering marauders. The natives in camp heard his cry and were speedily on the spot, but it was too late. He had been speared through the cheek, and his jugular vein had been severed. In a very few minutes he died. The victim's own kindred came in to take charge of the body, arriving even before Gaberio's messenger could reach their village, so swift and mysterious is the communication of news in New Guinea.

Now that Gaberio was back we were more than ever anxious to leave, for our provisions were running very low, and we were living principally on cockatoo soup. To make matters worse we had almost run out of ammunition, and for some time not even a pigeon broke the monotony of our poor fare. Occasionally we procured one or two sweet potatoes, but the natives were naturally very unwilling to sell them. A further difficulty stared us in the face, for the exhaustion of the natives through famine was now so great that I did not know how we were to get our baggage down to the coast, but relief dropped, if not from the clouds, at least from the hills.

One day we heard that the people of Ibala, who

had heard of the white men's coming, had been sufficiently overcome with curiosity to make the journey from their distant home to visit us. At that home of theirs, far away on one of the greater mountain sides of the Owen Stanley range, I had often gazed with wonder and all the explorer's longing. Some five or six days' journey to the north towered a great and mysterious peak, higher than Mount Yule, the northern slopes of which I imagine were in German territory. Close to this mountain was a range of low foot-hills, bare of trees, but clothed, as far as we could make out through our glasses, with rich pasturage, and it seemed an ideal spot for some future stock-breeder in New Guinea, for such open spaces for grazing-grounds are uncommon in the island. From these foot-hills there rose continually into the clear air countless columns of pale blue smoke, telling of a numerous population. On the mountain the forests hung dense to the summit, but the strangest thing of all was that through these masses of trees there ran what seemed like a drive, rising straight to the highest ridge, its sides as sharply and clearly marked as though it had been cleared by the hand of man. There were no straggling trees dotted here and there at irregular intervals from the sides. The forest left off sharply in an ascending line, but the space seemed to extend for at least 300 yards, and then the forest began again, being as clearly defined as the side of a well-built street. On the very summit we could make out through our glasses the presence of giant araucarias, of which I obtained some specimens from Sam,

NATIVES OF ENUMAKA IN THE OWEN STANLEY RANGE.

who, while absent on one of his short expeditions, sent a native up the mountain for seedlings. I hoped that one of these might find a home in some British collection, but, unfortunately, it died of the drought.

It was from that region that the Ibala people hailed, and certainly, had the difficulties of transport not been so great, I should long ere this have visited them in their fastnesses. These fine northern men entered camp very shyly, and sat down with great diffidence. In appearance they were really handsome. Each man stood 5 feet 8 inches on an average; all were of fine physique and of a rich copper colour. Their women, of whom they brought a few, were not quite so tall. They were all in full finery, the men decorated with feathers, their faces painted in regular stripes with the juice of a scarlet berry. Between each red stripe ran a line of charcoal to set off the colour. A few of them wore the transverse pencil of tapering shell thrust through the septum of the nose, a form of decoration much affected by Papuan dandies. The women's chief article of apparel was the customary dogs' teeth necklace.

At first our visitors did not ask for anything, but talked in a desultory way through Ow-bow, who knew their language. Later in the afternoon, however, they proffered a request for some tobacco. Here was my opportunity. These admirable fellows, who had come from a region where there was no famine and were in the pink of condition, were just the very material I wanted for my journey. Accordingly, I said that they should receive tobacco on condition that, on their being called by wireless telegraphy,

they would return and carry me to Ekeikei. They gave me their word, and I took the risk of their keeping it. They received their tobacco, but were in no apparent hurry to depart. In fact, they stayed two whole days, got over their first shyness, and cheered us up wonderfully—indeed, it was "roaring camp!" Growing bolder, they pried into everything, and the house was always full. There was great coming and going with the Dinawa people, with whom the Ibala people were related by marriage, and the nights were musical with unceasing mountain choruses.

Nothing would content them but they must see everything that the white men possessed, and it was very amusing to watch the men calling the women's attention to anything that particularly attracted them. They felt our clothes and looked with curiosity at our photographs. In their power of appreciating and understanding a picture, one could realise how much higher in the social scale they were than their neighbours, the Australian aborigines, to whom drawing was unintelligible. They would pick out the portraits of Dinawa characters, and exclaim with great delight, "Owbow—Doboi—Martu," as the case might be. I gave some additional tobacco to each man who would consent to stand for his photograph, but they never quite got over their shyness of the camera. Sometimes, when I had got everything fixed and ready, my sitter would get up and walk slowly away; some of the women faced the lens, but even when doing so, they would often cover their faces. Our visitors did not understand guns, so we took care not to frighten them with firearms.

GOOD-BYE TO DINAWA

On the third day, about ten in the morning, they announced that they were going. They got together the bags in which a Papuan carries his effects, packed up their new acquisitions, and did a little business with the Dinawa people in small articles I had traded with the villagers, such as matches, tobacco, or an axe, the greatest of treasures—for "trade," in the Papuan sense, had not reached Ibala. I myself made a few purchases from them, chiefly of clubs, for which I gave in exchange some small knives. To the Dinawa people they gave some sugar-cane, which was greedily snapped up by our destitute neighbours. Then they formed up, shook hands most cordially with us all, took the route, and disappeared into the forest, a party of men in front, the women in the centre carrying the loads, and another party of braves bringing up the rear. For a long time their shouts came echoing back to us through the trees. It was a most pleasant interlude, and when these cheerful fellows were gone we felt the camp almost painfully quiet.

One or two incidents occurred to break the monotony of the remaining days. While I was collecting, close to the Aculama, I heard the missionary dog barking in great excitement, and discovered that he had seen a tremendous snake. This I shot in the head and brought into camp, where, on measuring it, I found it to be 18 feet long and 4 inches in diameter. It was of a non-poisonous variety—one of those snakes that live on the small arboreal mammals. I still retain the skin and skeleton as trophies. Even minor incidents of these dull days seemed worthy of

setting down, and I note in my diary that one day one of my native carriers, who was going off to the river, demanded a gun. When I explained to him that he could not have one, he remarked with great nonchalance, "Maw-mo-na yow valeo dorka"—"Enough, I understand very well," and he went off contentedly without firearms.

I must not conclude my account of Dinawa without mentioning what was perhaps the greatest of its natural attractions—the almost overpowering magnificence of its sunsets. From the ridge I have watched every variety of colour, ranging from amber, gold, and orange, through purple and violet, to delicate shades of mauve, green, and pink—in fact, every hue of the prismatic spectrum was flung in magnificent profusion across the sky from horizon to zenith. On certain nights the whole landscape would be bathed in a glow of reflected crimson. It seemed as if the world were on fire. Even the vegetation was dyed a vivid red, and as the rim of the sun gradually disappeared, the tints melted to paler shades before they vanished. A brief period of starless twilight succeeded, and then the firmament was gemmed with a million sparkling points, and the tropic night reigned serene in its marvel and mystery. Many and many a time I have sat in rapt enjoyment of that gorgeous spectacle, watching the constellations wheel westward until the dawn overtook and hid them.

The day for our departure now began to draw very near. All the specimens were safely packed, but the question of transport pressed more and more heavily. From the Dinawa people, as I have noted,

VEGETATION AT DINAWA.

Some of the tree ferns grow to a height of 40 feet.

little help was to be expected. The fittest of the men were abroad in the forest on foraging expeditions, and when we asked the women to carry for us, they replied that they could not come while their husbands were away. We sent out our boys to see what they could do in the surrounding country, but they invariably came back to report that they could recruit very few men. We ourselves, after a great deal of wearisome tramping from village to village, managed to enlist a meagre band of five fairly able-bodied assistants, but our party was still very inadequate. This was on September 22. A few days earlier, in pursuance of the compact the Ibala people had made with me, I had set the telegraph in motion, and told Fa-lo-foida to call up Keakamana, Keakamana to call up Tapua, and so on stage by stage to the distant home of my picturesque mountaineers, to tell them that the time had come to redeem their promise and earn the tobacco advanced on personal security alone. The calling accordingly began, and in less than ten minutes Ibala of the five days' journey had received my summons. During the afternoon the answer arrived. Ibala was willing and would come. Accordingly, close to the time fixed for our departure—September 23—we were cheered by the return of our merry friends, who came like the honourable gentlemen they were to discharge their obligation.

Even with this reinforcement we were still undermanned, and decided to start with only half the baggage, leaving Gaberio behind to see to the despatch of the other half when the bearers should be

sent back. On September 23, at 9 A.M., we started for Ekeikei. At twelve we halted at Madui, where the natives wished to sleep; but this, of course, was out of the question, so we pushed on. As far as Madui the drought still prevailed. After that point it was damp, but not wet. In one way the drought had served us well, for all the leeches had died and we were saved from that pest; but the scrub-itch was worse than ever, especially after we passed Ekeikei. We reached the Bamboo Camp after a hard march at 7 P.M., and both we and our followers were thoroughly tired out. Next day we went by way of Ekeikei to Epa, when our friends from Ibala went back, having performed their undertaking. We found Epa terribly parched, and it presented a very different aspect to that which we had seen three months earlier. Thence we proceeded to Oofafa, where our old acquaintance Mavai saw us through with our impedimenta. We travelled by boat to Pokama, where we got on board a small cutter and set sail for Port Moresby. Unfortunately, we encountered very heavy weather, and had to beat up to our destination under a lashing south-east monsoon. We shipped many seas, and thus lost our fine herbarium, all the plants in which were blackened by salt water. This was an irreparable misfortune, and most disheartening after the tremendous trouble we had taken in collecting and drying our specimens of Papuan flora.

CHAPTER VIII

INACTION AND AN EXCURSION

Period of Inaction at Port Moresby—Christmas in New Guinea —A Scratch Dinner—A Christmas Privilege for Cingalese to obtain Spirits—Curious Effect on One Individual—A Noteworthy Character—An Excursion to Hula—A Fisher Community—A Piebald People—Picturesque Night Fishing by Flare Light—Fishermen often Killed by Gare-fish—Hula Houses—Various Traits of Native Life—A Walk round Hood's Bay—Traces of Initiatory Rites at Kalo—The Kalo Houses described—On to Kerapuna—A Shooting Expedition—We lose the Trail—Class Distinctions at Kerapuna—Return to Port Moresby by Sea—A Perilous Voyage in a Little Canoe—Tragic Death of Flood, the Naturalist.

CHAPTER VIII

INACTION AND AN EXCURSION

As there was really nothing to be done until the beginning of the year, we settled down at Port Moresby in some spare rooms which Sam, my Cingalese head-man, let me have in his house.

We occupied our time with the despatch of our collections. The herbarium, of course, had perished, but the moths, butterflies, and birds had come safely down from Dinawa. We did not disturb the boxes already packed, but merely stowed them in large cases, packing them with cocoanut fibre and straw to resist concussion. Each box was tin-lined, and on receiving its full complement was soldered up.

For the procuring of empty cases I was greatly obliged to the courtesy of Mr. Ballantine, the Curator of the Intestate Office at Port Moresby. This work occupied us in all over a fortnight, and finally we despatched our collections to England by way of Australia.

Thereafter the days were very dull and uneventful. Christmas was fast approaching, but there was very little hope of its being a merry one—for us, at any rate. The stores of provisions were running very short, and our Christmas dinner was probably one of the queerest that was ever set before an exiled Britisher. I left the task of preparing the meal

entirely to Sam, who managed somehow to procure some wallaby, a piece of bacon, and biscuits. Instead of pudding we had a Cingalese plum-cake, made by Sam's daughter, and a glass of claret rounded off the banquet. Harry and I dined together on the verandah, and remembered absent friends, but we were not very festive.

There is one curious observance of the Port Moresby Christmas which may be worthy of mention here. At that season any Cingalese resident in the place may, on obtaining a Government permit, be served with spirits at the Stores.

The effect of this privilege on one Port Moresby worthy was truly deplorable. I saw him in the road, and I have little doubt that he saw more than one of me, but then, of course, it was a year since he had permission before. He was quite a character, and his residence was as peculiar as himself. It was built entirely of flattened paraffin tins and other oddments, a style of architecture which I have also noticed in the West Indies.

Another Port Moresby character was Weaver, the greengrocer; he has a history, but no man knows it, and it is popularly reported that he has a family in Australia. He has been in New Guinea for some years, and lives quite alone in an isolated district where he built a house and took up some land. He stands 6 feet 2 inches, and is a curious eccentric fellow whom nobody understands. He does not care for visitors, and has even been known to threaten distinguished personages with his gun when they dared to knock at his door! Twice a week Weaver brings in his

A PIEBALD TRIBE: THE MOTU-MOTU PEOPLE OF HOOD'S BAY, AND A TYPICAL KALO HOUSE.

The piebald people are one of the mysteries of New Guinea, and their origin is unexplained. The spear in the warrior's hand is made of hard redwood, sharpened, and has no metal. The house is built on an open wooden framework, and the flooring of the dwelling-room begins at the bottom of the closed-in gable. On this inflammable floor, within the thatch of flag-grass, they actually have a fire on a mud hearth. The slanting pole is a ladder for the inhabitants. In some cases they have little ladders for the dogs.

vegetables, packed on two ponies, and sells them to Europeans at Port Moresby. It is said that he is accumulating money. He is perfectly independent, and quite a character; utterly illiterate, he has the dogged opinions which usually accompany lack of education. He believes in himself, has no one to help him in his work, and tells you quite frankly that he thinks *he* could run New Guinea better than any one. On all subjects under the sun the opinion of Weaver is absolutely right and that of the world absolutely wrong.

As the days dragged on Harry and I thought we would vary the monotony of our life, and obtain a change of diet, by taking a small excursion down to Hula, the great fishing-place. By the courtesy of a trader, who was going down in a whaleboat, we obtained a passage. A voyage of a few hours took us down, and we found the village fairly large, built like Hanuabada, only most of the houses stood in the water on piles. The shore is thickly fringed with cocoanut plantations. The people, who belong to the Motuan tribe, as those of Hanuabada do, live by supplying the inland natives with fish. They go down to the fishing-ground, about two miles from shore, in small dug-out canoes, and this industry affords a very delightful touch of colour to the scenery of this part of the Papuan coast. The fishing is done at night, and just as the sun sinks the canoes come up past Hula in great crowds. In each boat are four or five fishermen, who pole up the shallows and paddle when they come to deeper water. As the darkness deepens the flotilla suddenly bursts into flame, for their method of

attracting gare-fish, which is their chief quarry, is by burning huge flares of dried palm leaves. Each of these flares is made up of a considerable bundle of leaves, and the men brandish them about in their hands. The light lasts for a considerable time. The effect of these many fires, reflected in long tracks on the water, is extremely picturesque. The fishing lasts all night, and at dawn the fleet returns with its catch.

The work is not unattended with danger, for sometimes the gare-fish, which are armed with a sharp sword-like projection of bone from the front part of the head, will, as they leap in blind terror of the light, strike the fishermen and kill them. The natives set up a stick in the water where any one has been killed by gare-fish.

Another interesting feature of Hula was the presence there of a piebald people. For the most part their bodies were brown, but they were marked with pinkish patches unevenly distributed. It is not improbable that this marking might be due to a disease, contracted from a too constant fish diet, but if it were a disease I could not discover that it gave any discomfort. Against this theory must be set this fact, that I observed one man in whom the light markings predominated. In fact, he was quite fresh-coloured, like a European, and had light hair. These piebald people were not a class apart from the rest of the Hula villagers, but shared their life in every respect.

The piles on which the Hula houses are built look quite insufficient to support the superstructure. The pitch of the gables is not always uniform in the

same house, and in these cases the ridge pole is not horizontal.

Before we came to Hula, however, we had paid a visit to Kappa-Kappa, one of the very few localities in New Guinea that show any immediate result of missionary effort and of a direct attempt to introduce the methods of civilisation. There resides the agent of the London Missionary Society, Dr. Laws, who has been perhaps longer in British New Guinea than any other white man, for his stay now extends over thirty years. The missionary has a fine house standing on a slight elevation and commanding a magnificent view to the north and south. A remarkably fine road leads up to Dr. Laws' residence, and 300 yards away is the Christian village, built in detached houses along the rise and forming a regular street. We were very much amused to notice that the houses were all numbered, and that many of them had Scotch names inscribed on a little piece of wood fastened over the door.

There were about sixty houses in all, and a really fine church and school. This last we visited and heard the children sing. They gave not at all a bad performance for coast natives, to whose discordant tones I have already alluded, and if my good friends, the mountain people, with their beautiful voices and their fine idea of music, had had the same training, the effect would have been little short of charming. We saw the place at a slight disadvantage, for the drought had greatly withered the vegetation, and Dr. Laws' fine orange trees were all dead. The natives, I was glad to see, wore their ordinary dress, and no ridiculous

attempt had been made to thrust them into European clothes. Dr. Laws did everything in his power to render our visit pleasant, and to him and his wife we are indebted for much kind hospitality. There is much that is enviable in his pleasant dwelling-place, and he seems to be on excellent terms with the natives. As I have elsewhere had occasion to remark, it is doubtful whether this generation of Papuans is capable of much spiritual enlightenment at the missionary's hands, but the seeds of industrial progress at any rate are being sown, and the order and apparent prosperity of Kappa-Kappa say much for the work of the pioneer. There is no Paradise, however, without its serpent, and the scourge of Kappa-Kappa is the black snake, which attacks the natives.

The poison is most virulent, and Dr. Laws told me that if he could see the sufferer immediately he could save him, but if only a few minutes elapse before help is available death must inevitably ensue within an hour. This snake also kills the missionary's horses, which it invariably bites on the instep. He keeps the horses for his little trap, in which, at the close of our visit, he drove us down to the coast, a distance of about four miles.

Besides the things I have mentioned, we found little else to interest us in Hula, and after a short stay we set off to walk round Hood's Bay to Kalo, the next village of any importance, situated a little way from the coast. On the way we passed the little village of Babacca, the headquarters of a copra trader called Joher.

Formerly Kalo was the centre of strange cere-

monial dances, connected with the worship of the reproductive powers of Nature.

Initiatory rites were celebrated, and the orgies taken part in by the young men and women were often of the most indecorous character. By the decree of a paternal Government these celebrations have now ceased to exist. It is possible that they were accompanied by cannibalism, but I am not aware that there is any proof of this. Descriptions are extant, but it is doubtful whether these have been given at first hand, for the natives would certainly not have admitted visitors to their mysteries.

The houses at Kalo are the most substantial I saw in New Guinea. They were built upon 9-inch posts and were raised 10 or 11 feet off the ground. It was extraordinary to me how these posts were secured, the soil seemed so loose and sandy; about one-third distance up occurred a cross-piece, above which there were two others. The lower parallelogram thus formed was crossed by two diagonal pieces of bamboo, the third and upper parallelogram by one diagonal piece; these were the steps giving access to the house, and their arrangements will be easily understood by reference to the photograph. The third cross-piece, above which the gable is enclosed, marks the level of the floor. There was an open verandah at one end, and the house had only one room. The house was eaved, and was thatched with flag-grass, and the whole structure measured 30 feet by 15 feet. On the inflammable floor, within the thatch, they actually have a fire on a mud hearth. The strangest sight of all was the elaborate carvings hung

up outside, and it was a singular thing that no two houses at Kalo bore carvings of the same pattern.

We stayed only a few hours at Kalo, and then went on to Kerapuna, where we arrived about dusk after a long day's march. At one point our advance was barred by a small river, very still and muddy and fringed with rank vegetation, the whole aspect of the place proclaiming it the haunt of the crocodile. It would have saved time had we swum across, but the mere look of the place obviously made it unwise to do so, so we fetched a slight détour until we came to a little village where we were able to hire a canoe.

Kerapuna is a fairly large fishing village on the east side of Hood's Lagoon, just within the entrance. It possesses its missionary, Mr. Pearce, who lives there with his wife in great isolation. It is many years since he has been home, and it is not often that a European knocks at his door. With him we found hospitality. He is pleasantly housed and seems very comfortable and is on good terms with the natives, to whose spiritual needs he ministers in a little hall. It is doubtful how far the Papuan can be reached through theological channels at this stage of his development. A great deal, however, can be done towards training him in the simpler industries.

From Kerapuna we went out for a short shooting expedition in the flat, trackless forest that lies inland. The region is very gloomy; tall Pandanus trees with aërial roots and thickly matted branches obscure the daylight, but there is no dense undergrowth. There the gaura pigeon abounds, and we were fortunate enough to shoot some.

A HOUSE IN THE VILLAGE OF KALO.

The floor of the house is on a level with the eaves.

The little expedition, however, was rather uneventful, except at one point, where we discovered somewhat to our anxiety that we had lost the trail. The two natives we had brought with us went, one to the right and the other to the left, searching for it, and we kept shouting to each other all the time. At last, after a couple of hours' search, we found the track, which would have been visible only to a Papuan, as there was no well-worn path. We required native guidance also to get us back to the creek where we had left our canoe.

If there were no division between the piebald people and the ordinary inhabitants of Hula, at Kerapuna we noticed a curious class distinction, founded not on any physical peculiarity, but upon the mere question of occupation. One part of the village was occupied by the fisher tribe, the other part by a purely agricultural people. The latter were extremely lazy, and, as I have noted elsewhere, the lazier Papuan tribes are never fishermen, and always employ some more active people to do this work for them. The tillers of the soil and the spoilers of the sea hold rigidly aloof from one another at Kerapuna, and only meet on the common ground of an exchange of commodities—the fish being purchased for bananas and cocoanuts. Yet, strangely enough, the more active tribe was evidently there on sufferance, and was allowed to remain only because of the fish they supplied. Another remarkable point was, that the fishing populations dwelt on land and not on pile-built houses, as at Hula and Hanuabada. In this district we could get on without any other "trade" than tobacco.

As there was nothing to tempt us to remain, and as Kerapuna, even at the best, was a dull place, we did not stay longer than four or five days. I was very anxious, too, to get back to Port Moresby to make my preparations for a second journey into the interior to resume my work. We determined to make the return journey by water, and accordingly hired a little canoe from a native, who, with a companion, came with us to act as our navigator.

The little craft was hardly more than 18 inches wide, and just held the four of us in a rather cramped position. We set our course, which lay twenty miles across Hood's Bay to Hula, and started about 10 A.M. in fine weather. When we had got about half-way, however, the wind rose, and a tremendous swell began to come in from the point where the reef opens seawards, and very soon the dug-out was dancing like a cork and was continually shipping seas, so that Harry and I had to bale constantly.

I must say, however, that our natives knew how to handle their craft, and were very expert watermen. They kept the little square sail of matting under excellent control, and steered with the flat of a paddle from the side at the stern. Although they were very frightened, they did their best, and kept the canoe's head up to the seas very neatly. For a time, I must confess, I myself was doubtful whether we should get through safely. We were dripping wet and in rather a sorry plight, but after rounding the point close to Hula we got into calmer water, and we landed safely, but very stiff and cold.

Two or three days later we bade good-bye to Hula,

and the same whaler's trading boat that had got us down took us back to Port Moresby, where I at once set about active preparations for my second journey inland.

On my return to Port Moresby I heard, to my great regret, the news of the death of Mr. Flood, the American naturalist. When I went up to Dinawa, while on my first journey, I left Flood in Port Moresby. Some time after he went up the Venapa River, seeking land shells. He was foolish enough to go alone, and his folly was the greater because he was very deaf. At length the authorities got alarmed about him, and Mr. Ballantine headed a search party, but the only trace of the naturalist was one of his camp fires. It is thought almost certain that he may either have strayed away and died of hunger, or he may have been devoured by a crocodile. It was not the first time that a party had gone out to seek Flood after his prolonged absence had given cause for alarm, and it was doubly absurd of him to go alone, because, even with Papuan attendants, it is difficult—as I myself have found—to pick up the trail when once it has been lost. I was much distressed about Flood, for he was a most unselfish enthusiast in the pursuit of science.

CHAPTER IX

TOWARDS THE UNEXPLORED

Beginning of Furthest Journey into Unexplored Interior—The Everlasting Question of Carriers—Difficulties and Delays—Epa again—Curious Method of Water Supply—Mavai welcomes us back—He provides a Dubious Treat—Ekeikei—The Building of a Permanent Camp—An Elaborate Undertaking—House-building on a Large Scale—Ingenious Papuan Methods of Thatching—The Chief Kafulu proves Unneighbourly—He does not fulfil his Engagements—Ow-bow's Embassy—My Deputy is robbed—Precautions in Camp against Attack—I go down to Kafulu and deal faithfully with him—He relents, and restores Ow-bow's Goods—An Earthquake and Hurricane at Ekeikei

CHAPTER IX

TOWARDS THE UNEXPLORED

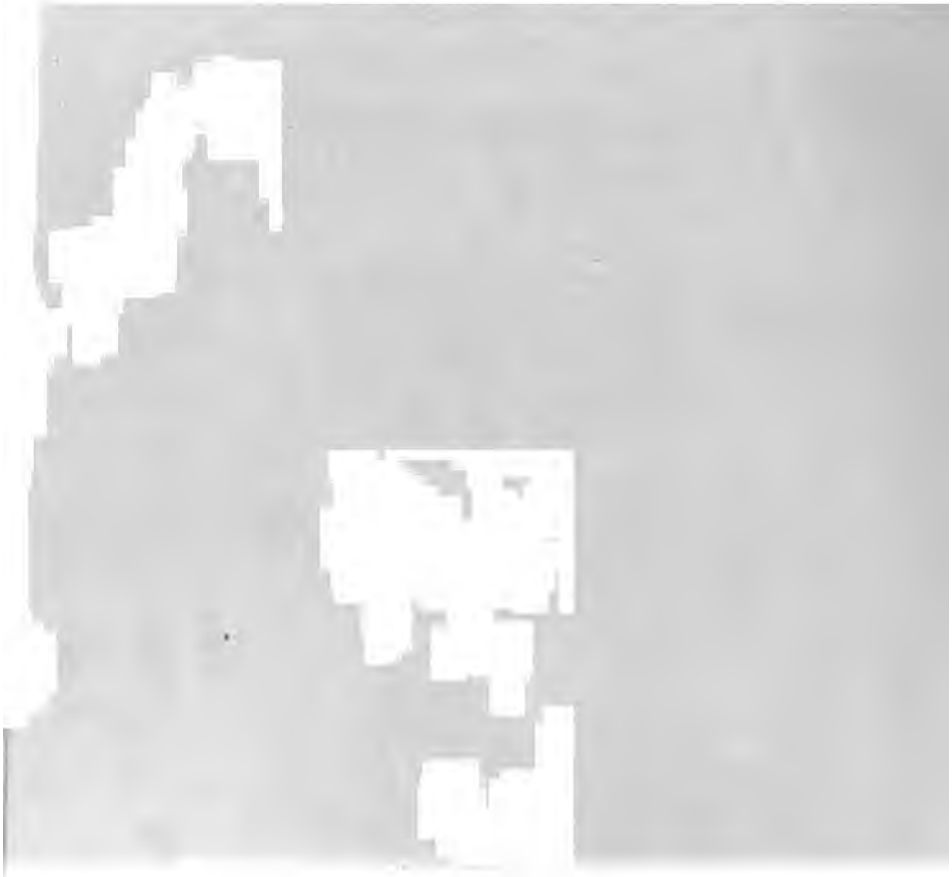
On January 1, 1903, Harry and I left Port Moresby on board Captain Pym's vessel, the *Whaup*. This took us to Yule Island, and from that point we proceeded to Pokama, on the mainland. There we were met and entertained by Cavé, a hospitable Papuan woman, widow of Captain Williams, a trader. She has a very comfortable bungalow at Pokama, and keeps a small store, where she does business with passing traders, who are always welcome at her house. She also owns a small light-draught cutter, which brings sandalwood down from Bioto Creek, and this boat she is willing to let out to travellers. She also keeps up the beautiful gardens and fine mango trees planted by her husband, and she cultivates custard apples and a delightful fruit known as Sour-sop. It is the shape of a kidney and about the size of a pumpkin; within it is a mass of creamy pulp, surrounding black seeds. This pulp is most cooling, and it is accompanied by a pleasantly astringent acid juice, the whole fruit forming an ideal refreshment for the tropics.

From Pokama we went by canoe to Yule Island, where we halted at the Sacred Heart Mission, and then went on to Aruopaka, where we stayed for several days in the house of Mr. Russell. Mr.

Russell himself was absent, but we joined him later at Moa, one and a half hours' row from Aruopaka, a voyage which we made in our host's whaleboat. From Moa we passed by way of Inawee, Inawa, and Inawabia to Aipiana, the Government station, where Mr. Russell entertained us for five days. In the curiously-named villages just mentioned we tried to collect carriers, and at this juncture I sent Harry back to Pokama to bring on the goods we had left behind us, appointing to meet him at Bioto. During his absence Mr. Russell and I went to the southward through other villages Rarai and Nara, and picked up twenty more men. On our way through these southern villages we met Captain Barton, then the head of the native armed constabulary, and now the Administrator. With him I spent one night, and then pushed on to Bioto with my thirty bearers, who, as yet, had nothing to carry. To perform the journey adequately I really should have had a force of seventy. At Bioto we enlisted a few, but our numbers were still very insufficient. At 4 A.M. in the morning after my arrival at Bioto, Harry rejoined me, and during that day we began sending the baggage by relays to Epa. Harry had been enabled to bring all our remaining goods with him through the kindness of the Rev. Mr. Dauncey, who had lent him his whaleboat. With the help of the Chief Constable, who gave us the use of his canoe, we got the baggage along to Oofafa, from which point I was assisted by my old friend Mavai, who sent down carriers from Epa to take the stuff up to Ekeikei. At Bioto the mosquitoes were at this time a terror, and were

THE VILLAGES OF ELEVADA AND BANUABADA.

The latter is built on piles in the water. Its inhabitants are the potters of New Guinea.



so thick that one could hardly put food in one's mouth or take an aim with a gun.

While we passed through Epa on this occasion, I noticed specially the extraordinary method of water-supply there in vogue. A spring which supplies the community was distant some twenty minutes' walk down-hill, and twice every day, in the morning and just before dusk, the women went down to draw water. This they carried in long bamboos, measuring at least 12 feet. The partitions dividing the sections of bamboo had been knocked out with a long, hard stick, the bottom one was allowed to remain, and these light but unwieldy receptacles, capable of holding about thirty-six pints each, were taken to the spring and filled. The open end was plugged with a green leaf, and the women carried the vessels up-hill held slantwise over their shoulder. The bamboo was set up against a shady wall, beside the house door, and the method of procuring a small supply of water was comical in the extreme. Whenever you wanted a drink two people had to officiate; a native took hold of the bamboo by the lower end and you proceeded to the other. It was then gingerly lowered towards you, for the greatest care had to be taken not to tilt it too far, otherwise more water than you wanted would have come out with a rush and drenched you.

On my reappearance at that village I was very heartily welcomed by the chief. I found him busily engaged in hunting the cassowary and the pig, and generally keeping up his reputation of a great sportsman.

During this visit to Mavai, the excellent chief, who kept fowls, presented me with two eggs; these we boiled with lively anticipations of a treat, but we broke the shells only to discover that the eggs were of a remote antiquity. We passed them on, however, to Ow-bow, who received them with gratitude, for he regarded chicken in this form as a very great delicacy indeed.

I purchased some sago from the chief, and when we got bearers together I started for Ekeikei. One day's journey brought us to our destination, which was situated 1500 feet above sea level, on the foot-hills of the Owen Stanley range. This point I had already selected in my mind as the scene of my future labours, and I at once set about building a permanent camp. I chose the site in a part of the forest overlooking a fine valley, and we set to work speedily, felling the forest trees to make the necessary clearing. It was a big business, much bigger than founding our establishment at Dinawa, but I intended to erect much more permanent structures, which were to be built large enough not only to serve for scientific work, but as a depôt for expeditions to other districts. The house and two collecting verandahs were all in one building, one verandah facing the forest and the other the valley, so as to permit of work being carried on whatever the direction of the wind. The whole structure was built on poles 6 feet 6 inches off the ground, so that my natives could shelter, sling their hammocks, and take their meals below. This work occupied us three weeks, and in it we were assisted by Mavai's people, who were

helped by the villagers of the neighbouring chief, Kafulu. These came in to lend a hand for the sake of tobacco and other trade articles they needed.

The best thatch to be obtained in Papua is the sago leaf, and of this the natives make roofs that are water-tight and very durable. At Ekeikei we adopted this method. Along the rafters of our house we ran horizontal bamboos, and instead of a ridge-pole roof we had two of these bamboos running from end to end a few inches apart. The frond of the sago leaf which we used for this purpose is at least 4 feet long; it measures 6 inches at the base, and tapers to a point. To begin the thatch, one takes the leaf and bends it two-thirds away from the apex. One starts from the bamboo horizontal that lies nearest the eaves, and hooks the leaf over, laying the pointed end out. On the next higher bamboo one hooks over another leaf, similarly folded, so that its long pointed end far overlaps the other, and so on until the ridge of the roof is reached. The operation is thus repeated until the whole roof is thatched. The space between the two parallels which form the ridge-pole is finally covered with grass laid thickly across and across. The sago leaf is grooved laterally, and forms, as it were, a natural water-spout for carrying off the rain.

So durable is this roof that after an absence of five months we found that our Ekeikei house was still water-tight. This thatch is, however, a great harbourage for cockroaches, and there must have been millions of them in our house. At night we could hear them rustling among the dry leaves. I could

not ascertain that they had done any actual damage, and they had the grace not to fall down upon us.

As soon as the camp was finished we settled down to our old routine of work, very similar to that observed during our stay at Dinawa, and for a time all went smoothly. But suddenly a cloud loomed upon our horizon in the shape of our neighbour Kafulu. This worthy, whose village was an hour's journey off, had often visited the camp while the building was in progress. He was a very low type of Papuan, with a receding forehead and a face altogether ape-like. After his people, who helped me in my building operations, had been paid off, I did a little business with the chief himself, and ordered sago stalks for wattling the sides of the house. For these I paid in advance, but the sago was not forthcoming. I made no complaint at first, and this probably deceived him into thinking I might be treated with further contumely, for he suddenly began to threaten my boys, until at last they would no longer venture out into the forest to collect. Accordingly, I sent my trusty advocate Ow-bow and his wife down to Kafulu's village to know the reason why he did not deliver the sago, which was several weeks overdue. Ow-bow was allowed to take a gun with him, but no cartridges, and his empty weapon evidently was not impressive. My emissary's experience was painful; Kafulu did not take his life, but he took his effects. Now, every Papuan carries with him as his most cherished possession a little net-bag, containing a charming collection of oddments dear to the savage mind—his

NEW GUINEA HOUSE BUILDING.

Our house at Ekeikei under construction.

knife, tobacco, bamboo pipe, matches, which he had earned, betel-nut and gourd, and little trophies of the chase. All these Kafulu took from the unfortunate Ow-bow, as well as his blanket, his dogs' teeth necklace, and other adornments. Thus bereft, Ow-bow executed a strategic movement to the rear, and returned to camp with his tale of wrong. Kafulu then sent in a polite message informing me that he had no intention of sending the sago, and further, that I was not to shoot bird, kangaroo, wallaby, or any game around my camp, for they were his animals; otherwise he would burn the camp and kill us all.

As matters stood thus, I considered that greater precautions were necessary, especially as I knew that Kafulu had recently broken into and robbed the mission-house at Ekeikei, for it was more than likely that a treacherous spear might, in the darkness, penetrate the thin sago walls of our house, and perhaps find its billet. We accordingly built around our beds an inner screen of 1½-inch bamboo poles, and even though a missile had penetrated the thin sago walls, it would have been stopped by this barricade.

Matters did not improve, and accordingly, taking Harry and Sam with me, I determined to go down and try what a little plain personal dealing could accomplish with our agreeable neighbour. I found him in his village, sitting apart, smoking the bau-bau, and extremely surly. He gave us no greeting, in fact, took not the slightest notice of us, and continued to smoke stolidly. We sat down, and I at once opened the affair, Sam and Harry acting as my interpreters. I told Kafulu that unless he sent the

sago at once, and returned Ow-bow's goods, it would be necessary for me to bring pressure to bear on him. This was continued for three-quarters of an hour, entirely on my part, for it was not until that time had elapsed that Kafulu deigned to reply. He then remarked that he did not want me in the neighbourhood, and that he could not answer for it that his villagers would not wipe us out. At the end of an hour he showed some signs of relenting, but the victory was not yet won. The parley still continued, and Kafulu resumed his pipe, whereupon I gave him some tobacco, which he took without thanks. At the end of three hours certain arguments, which I thought proper to use, prevailed, and he produced some of Ow-bow's goods. Ow-bow remarked that that was not all, whereupon Kafulu promised to send everything, to deliver the sago, and also that he would not frighten our collectors any more. With this assurance we shook hands upon it and I returned to camp.

Two days after the sago arrived, and in four days the whole of Ow-bow's possessions were returned. They were brought in by some of Kafulu's villagers and handed to their owner without comment. Thereafter, as far as I could see, Kafulu lived a sober, righteous, and godly life. I am not sure, however, although he committed no overt act of hostility, that he was not the instigator of some trouble which I had at a later period with the Madui people.

During our stay at Ekeikei we experienced an earthquake shock, not great but sufficiently alarming. There were two distinct shocks, which shook the house

IN THE PRIMEVAL FOREST.

violently, and the phenomenon was peculiar inasmuch as it was not heralded by any preliminary rumblings as is usually the case. Many of the other atmospheric signs usually accompanying an earthquake were, however, present. There was a tremendous and oppressive heat with death-like stillness; the skies were inky black, and there was a perfect deluge of rain, so heavy that it could easily have been described as pouring down in bucketfuls. Then the heavens opened with what seemed to be rivers of lightning, for the discharges resembled great main streams with thousands of fiery affluents, and all around us the thunder crashed terrifically, seeming at times as if it were inside the house. For three-quarters of an hour there was no cessation of the din. A tree just below our verandah was struck and split from top to bottom, but fortunately no one was injured.

After the worst of the storm had passed, a fierce hurricane came, tearing up the valley which our camp faced. We heard its roaring long before we felt its force. When it came it blew off some of the thatch of one of our buildings. We were to a certain extent protected from its full force by the large trees around us, and at the same time we were saved from the danger of falling trees, because, with a view to the emergencies of such storms, we had taken care to fell all the larger trees for a considerable distance around our camp. The effect of the on-coming wind heard at a distance had another weird parallel in the onset of rain storms, for we heard the rush and patter of a distant shower long before it was actually raining at our camp.

At Ekeikei were swarms of wasps that haunted the low bushes, and concealed themselves under the leaves so cunningly that the traveller did not perceive them till he was actually upon them. Their bodies are a dark yellowish brown. At the least disturbance they all rise together in a buzzing cloud and take vengeance. The sting is severe, but the pain fortunately does not last long. It dies out in six or seven minutes, leaving a red lump which gradually subsides.

CHAPTER X

UPS AND DOWNS

My man Sam goes to the Kebea to collect—We go to the Coast again with our Specimens—A Dreadful Night in Bioto Creek—A Crocodile River—A Tempestuous Voyage to Thursday Island—Fever—Return to Port Moresby—Adrift for Three Days in a Heavy Sea—A German Captain's Thrilling Story of the Storm—We return to Ekeikei—A New Trouble—Epidemic of Measles among Native Followers—Harry goes off alone among Cannibals—Adventurous Journey of a Boy of Sixteen—Description of Native Village on a 15-inch-wide Ridge.

CHAPTER X

UPS AND DOWNS

THE day after I had settled the business with Kafulu, I sent Sam on to the Kebea to collect Lepidoptera, so that we might be working two different localities and elevations at the same time. On April 26 Harry left Ekeikei to fetch Sam back with the collections he had made, for we had decided to go back to Hall Sound and send home our specimens, which the humid atmosphere was threatening to spoil. In due time they returned, and after I had examined the results of Sam's labours, I arranged with him to return to Foula, where he had been collecting, while my son and myself went down to the coast.

The journey down was not very eventful, but one night we spent at Bioto Creek will always remain memorable to us. At Bioto we put all our cases on board a canoe, and set out with two natives to navigate the overladen craft to Pokama. As we did not leave until late we were forced to spend the whole night in the creek. In our crazy vessel, weighed down almost to the water's edge, for she had only three inches of free board, we lay close inshore, under dense mangrove trees. Sleep was impossible, for we were assailed by mosquitoes and other discomforts; added to this we had to endure the stench of mud, the hoarse cry of the mound-builder, the clacking of myriads of

bivalves as the tide receded, the incessant rain, the inky blackness of the night, and the unmistakable presence of innumerable crocodiles. Fortunately we did not know then that only a short time before, near this place, two natives had had a desperate fight with a crocodile, which lifted one of them right out of their canoe; the other fought the crocodile gallantly, and managed to get his companion back into the boat, when the saurian, nothing daunted, returned to the attack, and seized the poor fellow again, dismembering him.

Although we had not the knowledge of this accident to add to our troubles, that night in Bioto Creek, which we spent cramped up in the most uncomfortable position, was probably the most unenviable I have ever passed. Darkness fell at 6.30; at 3.30 A.M. we were very glad to welcome the moonrise, and saw the light gradually silhouette the dense matted branches of the mangrove. About 4 A.M. we left our anchorage, and the dawn saw us well on our voyage to Pokama. It was wonderful on our arrival there how soon, under the influence of a good bath, clean clothes, a white table-cloth, and a decent meal, we forgot the horrors of the night that had just passed.

From Pokama we went on to Hall Sound, where we were fortunate enough to find the ketch *St. Andrew* about to sail, and on board that boat we secured a passage. Setting out on the 4th May, we were often badly becalmed, and on the third day we lay ten miles off the coast for the whole twenty-four hours. On the 9th we sighted an islet thirty miles from Thursday Island. This we passed safely, but at 1.30 a strong

POLLING LAKATOIS (RAFTS OF CANOES) OUT FROM THE SHORE.

tide from the leeward set us to windward of the next island, where there is a bad reef, and at 4 P.M., when we were running before the wind at the rate of six knots an hour, we ran right on to it. As morning broke we found we were on a shelving reef, and in a very undesirable predicament indeed. We threw out stone ballast, and after bumping about for four hours, and making many unsuccessful attempts to get the boat off, losing an anchor and chain in the process, we managed to get clear with the flood tide. Next night we got into Thursday Island, and, on examining the ship, we found that some sheets of copper had been torn off her.

At Thursday Island we were both prostrated by a sharp attack of fever. This was the first time it had seized me since I came to New Guinea, and it is not unusual when a man has been living in the wilds for some time, and has escaped malaria, that he falls a victim to it almost as soon as he returns to comparative civilisation and better food. In spite of this drawback, we were successful in getting our collections despatched, and at 8 P.M., on the 23rd of May, on a dark, dirty, and very gusty night, with a nasty sea running, we left Thursday Island, and steered our course for Hall Sound. In the vicinity of Bramble Cay—a dangerous sandbank, about 160 miles from Yule Island—we had our sails blown away, and were left in an almost helpless condition, only two small sails remaining. For the three following days we beat about in a heavy sea, not knowing exactly where we were, for we had not been able to take an observation since we left.

On the evening of Friday the 29th May we managed to get under the shelter of Yule Island, inside the reef, and into smoother water. This was fortunate, for that night it blew a hurricane, and there was a heavy sea, even where we were lying. When daylight broke we went on, and anchored off the mission station at Yule Island, whence we sent word to Port Moresby by whaleboat that, owing to our disabled condition, it would be impossible for us to go there to clear, for the Customs regulations are that all vessels crossing to New Guinea must clear at Port Moresby, Samurai, or Daru. Of course, we could not beat up to Port Moresby against the S.E. monsoon without sails, so we lay there five days, until the whaleboat returned with our clearance. Our stay was anything but pleasant, for we had to remain on board the small ketch under a blazing sun, as we were unable to land until we got our clearance from the Customs.

There was, however, one remarkable diversion during this weary time of waiting; for on our arrival we found, to our surprise, a large iron sailing-ship at anchor in the sound—certainly the largest vessel that ever entered it. She proved to be the *W. C. Watjen*, a German barque that had gone through a terrible experience in the very centre of the typhoon, the tail of which had given us so much trouble. I made friends with the captain—a hero in his way—who, without being aware of what an extraordinary feat of seamanship he had performed, told me in the quietest possible manner one of the most wonderful tales of the sea it has ever been my lot to hear. It was

indeed, in many particulars, almost an exact parallel to Mr. Conrad's remarkable story, "Typhoon."

The vessel was bound from New York for Yokohama with kerosene. She had been out from New York for 196 days without sighting a single ship, and when off the coast of New Caledonia she encountered the typhoon. The captain's first warning that a tempest was brewing was, of course, a sudden and unaccountable fall of the glass. Suspecting what was in store for him, he went on deck and gave orders to prepare for a typhoon. In fifteen minutes he returned to his cabin, and found that in that short space of time the mercury had actually fallen seven-sixteenths more, and he knew from that indication that he would shortly have to face a storm, which he may well have doubted the powers of his vessel to weather.

Before very long the tempest struck her in all its fury. For five days she encountered the direst perils. Her cargo had originally consisted of 80,000 cases of kerosene, and during the worst of the tempest 20,000 had been thrown overboard. On the very first day the rudder was carried away, but by extraordinary efforts the crew contrived to rig a staging at the stern for steering, and they managed to fit up a primitive rudder. The captain was injured when the rudder was carried away, for the long tiller (the *W. C. Watjen* was so old-fashioned that they did not use a wheel) swept round and hit the master heavily on the groin. A huge hole, six feet in diameter, had been knocked in the stern when the rudder was carried away, and this flooded the cabin and the middle part of the ship. They managed to stop the hole and bale out the cabin,

but the tremendous seas denied the crew all access to the forward part of the vessel, where the store of fresh water was kept, and for five days they had nothing to drink but the dish-water which had been left in the cook's galley. Strangely enough, there was only one very serious casualty, the second mate being disabled by an accident to his knee. The captain told me that during the worst of the storm they were continually under water; the seas seemed to strike them simultaneously at bow, stern, port, and starboard, and at times seemed to descend even from the heavens. How terrible the force of the tempest must have been was proved by the fact that the great steel masts of the vessel, six feet in circumference, had all gone over the side.

Although thus disabled herself, however, the *W. C. Watjen* was enabled to play good Samaritan to a smaller German vessel in a like plight, and took up her crew and brought them safely to Hall Sound. All the bulwarks were carried away, iron plates one-eighth of an inch thick were peeled from the sides of the ship, and crumpled up like paper by the force of the wind and sea. After the fifth day the captain was able to take an observation, and, by the help of an old chart, he concluded that New Guinea must be his nearest land. Crippled as he was, he endeavoured to make for Yule Island, where his chart, which was incomplete, told him there was a mission station, and, curiously enough, he was quite close to his desired haven when he was discovered and towed in by the *Moresby* after seventy-six days' stress. Had the vessel drifted farther west, she must have gone on the reefs,

and the crew would certainly have fallen victims to the cannibal natives. It is really extraordinary how she managed to escape all the dangers of the coral islands that dot the seas for at least 200 miles west of Hall Sound.

The same typhoon wrecked Townsville, unroofed an hotel, reduced brick buildings to débris and killed seven men; at the same time the sea receded and left the shipping dry.

When we had been lying in Hall Sound some three or four days, the *Merrie England* came up with the Administrator, Mr. Ruthven Le Hunte, who asked us to breakfast, and told us that for some days he had been very anxious about the *St. Andrew* and had been keeping a sharp look-out for us on his passage from the west.

When we had finally got our clearance we set about going to camp again at Ekeikei, but it took us until the 17th June to get together our carriers. The old difficulties in regard to them again beset us, but after great trouble and much searching and persuasion we obtained a somewhat inadequate force with which we pushed on and got back to Ekeikei on the 20th June. There five of our boys deserted.

No sooner were we back in camp than a new trouble assailed us in the shape of an attack of sickness among our natives. We had hardly been a week at Ekeikei and were just settling down to our work, when one or two boys turned ill and complained of headache and were very feverish, and very soon the tell-tale rash proclaimed they had

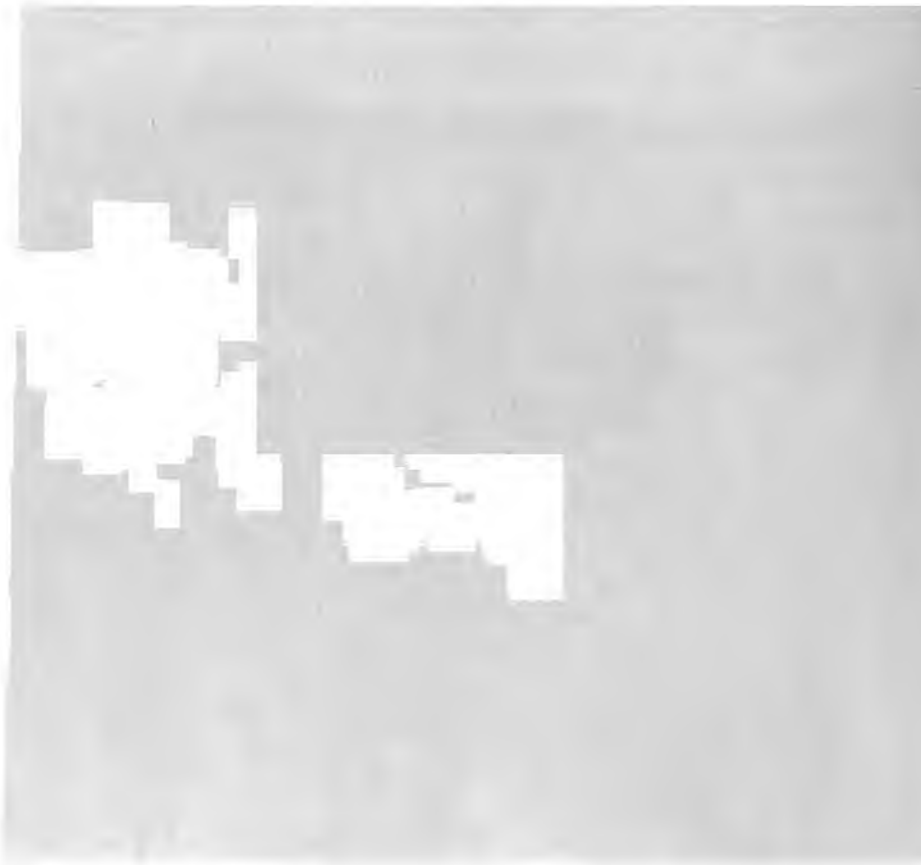
German measles. They were very miserable, poor fellows, and lay, some under the house, and some in the sun, all showing signs of considerable distress. Nursing, according to our ideas, was of course impossible, for you cannot induce a savage to keep himself covered up. A curious symptom in one case was that the boy's speech was affected. We did our best for them and gave them cooling medicine, and fortunately they all recovered. As soon as they were convalescent they wanted to go back to their villages, and it was very difficult to dissuade them. That would of course have been a very disastrous proceeding, as they would certainly have returned only to spread the infection, which is most easily communicated during convalescence.

Knowing that they had caught the disease on the coast, they were, naturally, very reluctant ever to undertake any other journeys for me to the sea again, and the situation was altogether very trying, for they said that the white man brought the sickness. While it lasted it was a very hard matter to hold the camp together. Finally, however, when they saw that the white man was doing everything in his power to help them, they were reassured. On their own account they tried to treat themselves, by the peculiar native method of bleeding, which will be found more particularly described in the chapter dealing specially with Papuan manners and customs.

On June 22 we lost Sam for awhile, for we had to let him go down to Port Moresby to be treated for some trouble in his leg, but he promised to return in six weeks.

A DESERTED VILLAGE.

All the inhabitants of the village had fled at our approach except one old man.



At the beginning of July Harry set out on a rather adventurous journey, for I consented to allow him to go alone to the Kebea. It is scarcely likely that in the history of British New Guinea an English boy of sixteen has ever been alone with cannibals. His difficulties were not long in beginning, and I quote the following extracts from his diary:—

"Left Ekeikei 5.30 A.M. After half-an-hour one man played out, so I had to take about 12 lbs. out of his bag and carry it myself; two hours from Madui he played right out; a woman carried his load. We travelled very slowly and stopped often. Did not get to Madui until 4 P.M.; found the little bottle of brandy father gave me in case of need, broken and contents gone.

"*July 2nd*, '03.—After changing carriers went on to Dinawa, and after resting a little, on to the Kebea, where we arrived at 5 P.M.

"*July 7th*.—I left for Yo-ya-ka, on the other side of the Kebea, as I wanted to get carriers to go to Ekeikei to bring up father and Sam. They were very frightened when I went into the village and would not come near me. The road was very steep and I got back very tired. It was a long walk. Could not get any carriers.

"*July 8th*.—There is a feast at Yo-ya-ka and I shall be very glad when it is over, as then I hope to get carriers. There is not much food here, only sweet potatoes. A difficult country to shoot or collect in.

"*July 9th*.—Hardly any food left. The natives of

the village of Inomaka object to my collector shooting there, and refuse to permit him to collect butterflies, so the boy returned empty-handed. I am sending a few carriers to father, only three. I have been busy enclosing the end of the hut that Sam had previously hastily built up, as it was left open. One of my boys, Matu, left me yesterday and has not returned.

"*July 13th.*—Shall be glad of the shooters' return, for I have had no meat for nine days, only sweet potatoes. Last night I tried the lamp for moths and did not do badly.

"*July 14th.*—Shooters return with nothing. Owbow arrived in the afternoon, but no carriers. Got 190 moths to-night and busy pinning them to-day.

"*July 15th.*—Father arrived at 4.30 P.M."

Amplified Note on the Journey to Yo-ya-ka

For my journey to Yo-ya-ka I started from a point opposite the Kebea and went down past one of the Yuni-Yuni villages, situated on a spur of the mountains. We then made a long ascent of some 2000 feet leading up to the same ridge as Mount Kebea where the village of Yo-ya-ka is situated. It was a most remarkable place, and it is difficult to convey exactly to those who have never seen it, the idea of what these Papuan ridges with their strangely perched villages are. They come up almost to a razor edge, relatively speaking, and certainly the free foot-way on that Yo-ya-ka ridge was no wider than fifteen inches. This narrow strip of foothold followed the main street

of the village, and on each side of it the houses were on supporting poles. The extreme sharpness of the declivity on each side, of course, made the houses much higher on the side farthest from the road than on that facing it. As structures they were not much to boast of; there were about twenty of them and all were tumble-down. The Yo-ya-ka people were preparing for a feast, and when I arrived the men were strutting about in their feathers and paint. Various tribesmen from a distance had assembled; three were from Yuni-Yuni and some from Bawboi. Among the visitors we noticed some familiar faces. A native helper named Gavashana recognised me at once. He asked me to come in, so I sat down and gave him some tobacco. The Bawboi people, however, were greatly alarmed at my appearance. They began to cry and retreated, saying it was "Fi-fi," that is, magic. Their acquaintances, however, reassured them and made them come up to me and shake hands. I then tried to induce a few men to enter our service as carriers, but failed, so I determined to return and started at once. When I had gone a little way up the ridge, Ow-bow, for some reason best known to himself, persuaded me to let off my gun, whereat the whole of the merry-makers turned out and began to jabber at the rate of nineteen to the dozen.

I returned to the camp at Mount Kebea, and for the next week or so experienced rainy weather and great discomfort. All my provisions were gone, and I had to live on sweet potatoes and a few birds we could shoot. I tried eating the *Drepanornis Albertisii*,

but it was the most shocking flesh I have ever eaten. We roasted the bird on a split stick and found it as bitter as gall; as was to be expected, I did not go further than the first mouthful, although I was very hungry.

CHAPTER XI

A BOY OF SIXTEEN ALONE WITH CANNIBALS

Further into the Mountains—A Murder—The Settlement of the Blood Price—A Pig for a Life—Harry's Further Adventures alone among Cannibals—Various other Murders—The Village of Amana—A Tree House—The Lunatic at Amana—Foula—A Pretty Village.

CHAPTER XI

ALONE WITH CANNIBALS

The next day or two are thus outlined in Harry's diary:—

"*July 17th*, 1903.—Some natives arrived from Deva-Deva and two from a village close by called Coo-lu-coo-lu. These natives are going for us to Ekeikei to fetch up our things, but they ask for a gun as they are afraid of the Madui people—likely!

"*July 21st.*—Father down with fever.

"*July 23rd.*—Yesterday's report that a man had been killed proved correct. Getting some fine moths, about 300 last night—good nights are rare. Sam returned to-day with the three boys he took with him; they are to have a few days' holiday and then they will return to us. Warm, misty, dark nights such as we are having are best for moths.

"*July 28th.*—To-night the best night we have had as yet, 750 specimens—94 of which were Sphingadae. On nights like this we do not go to bed at all. Getting short of boxes. We have to send to Ekeikei for material."

Note on the Murder of Ow-bow's Brother

One evening we heard a woman wailing down in the village and knew that something was wrong.

Shortly afterwards the natives began calling, and we learned that some one had been killed. A messenger came up to tell us it was Ow-bow's brother who had been murdered. The latter man was much disconcerted, and tried to persuade himself that it could not be so. Later on, however, the messenger came up with indisputable news, and we heard that the murder had been occasioned by a proceeding that was to some extent romantic.

It seemed that Ow-bow's brother had some time before stolen the murderer's wife, and taken her away to his own village and kept her there. After a time it occurred to him that having got her he might as well pay for her, after the native manner, and accordingly he visited the husband in order to settle his account. The husband, however, was not disposed to receive compensation of this sort, and accordingly he killed and ate the other. There is no doubt that he had heard of the man's intention to come and see him, and that he laid wait for him. The victim was either speared or clubbed.

The wailing for the dead man lasted about four or five hours, which is about the limit of Papuan mourning. After that time a murder becomes merely an interesting subject of conversation, and the people gathered around the camp fires, eagerly conversing in low tones until far into the night. At first their disposition was to demand a life for a life, that they might slay and eat, although, curiously enough, they would not have committed cannibalism in the presence of a white man or a native woman!

Next day our people and the villagers held a con-

HARRY PRATT.

ference; they did not meet, however, but simply contented themselves with calling from ridge to ridge. Gradually the idea of the vendetta wore out of their minds, and at last it was proposed that the murderer, instead of paying a life for a life, should simply pay a pig for the murdered man.

Accordingly two messengers brought in the compensation, slung on a pole. The pig was solemnly slain and eaten, and the incident was closed.

The next extract from my son's diary is more important, for if his journey close to the Kebea was risky, it was not nearly so sensational as one he had afterwards to make back to Ekeikei in order to relieve our higher camp from the pinch of hunger. His own account, however, scarcely gives a hint of the peril he was in.

"*July 30th.*—All the boys engaged to go to Ekeikei for the sago have run away, as they say that the natives at the village of Madui are hostile. Sam has gone out carrier hunting and obtained only two.

"*July 31st.*—I left this morning (as we are out of trade and provisions) at 6 o'clock for Ekeikei, arriving there at 4.30, but it was 2 A.M. before I could rest.

"*Sat., Aug. 1st.*—Left Ekeikei early about 7 A.M., and reached Madui about 4 o'clock. Had a bad night; it was very long, and I had no sleep at all. The mist very thick over the Madui hills. A good night for moths had it not been so light."

"*Aug. 2nd.*—Reached the Kebea at 3 P.M.

"*Aug. 3rd.*—Very busy making sago boxes.

"*Aug. 4th.*—They killed another man at Madui the night I was there—they are killing a lot of men, women, and children."

The incident here outlined by my son may well bear a little further amplification. Trade and provisions had all but failed us, and I could not possibly go back myself to our base at Ekeikei without serious loss of time. It would have been out of the question, too, to take back the whole party. There were sufficient indications of the unrest among the natives at the time, and consequently it was nothing but the direst necessity that induced me to accept Harry's offer to go down himself with a few carriers to bring up what we required. I had great confidence in the lad's common-sense, he knew the language, and he seemed to have the knack of dealing with the natives. After serious consideration of the risk, therefore, I agreed to let him go. At first it was not easy to get our carriers to undertake the journey, so evil was the reputation of the village of Madui through which the party must pass, but after persuasion we got the consent of a sufficient number, and not without serious misgivings, which I was careful to conceal, did I watch the little party set out. The matter, however, was urgent. Starvation, rebellion, and desertion of my followers threatened us had we been left absolutely destitute. On the way down Harry and his party got through Madui safely. They reached Ekeikei, procured what they wanted from our stores, and began the toilsome ascent once more. At Madui trouble awaited them. There had been a native fracas, a man had just been murdered, and the blood-lust

was strong in the people, who, on Harry's arrival, demanded that he should give up one of his boys to be killed and eaten. My son, though well armed, had the wisdom not to make any parade of force, and resorted to persuasion. After much argument, he persuaded the Madui people to forego their demand, but it is not surprising that during the night, in the course of which another murder was committed, he kept the strictest watch, allowing himself not a wink of sleep. One can well believe he found the vigil "long." In the morning they got clear away with their loads, and the same evening I was, needless to say, relieved and delighted to welcome them back to my camp on the Kebea. No youth of my son's age has ever, I am sure, undertaken so hazardous a journey among the New Guinea cannibals.

"Preparations to leave the Kebea for Foula.

"*Aug. 8th.*—Left the Kebea at 9 A.M. Left eight loads behind me. Reached Coo-lu-coo-lu at 11 A.M. We ascended a hill 4000 feet high, then descended 2000 feet, very steep, then up again to Coo-lu-coo-lu. Many of the inhabitants are absent making sago.

"*Aug. 11th.*—Kept two days for our relays. Only by studying the daily routine of this journal can any one realise the difficulty of getting about in New Guinea.

"Reached Ba-booni after three hours' walk, and then descended 1000 feet to the river Aculama.

"*Aug. 12th.*—We arrived at Amana at 10 A.M. There is a tree-house here, 40 feet above the ground—

used as a look-out station. A small village, and the people bad. About two months ago the chief murdered a man and a boy close to our yesterday's camp. We heard of five other recent murders. There is a lunatic here, the first and only lunatic we saw in New Guinea. We sent an armed native to call Foula to our aid for carrying."

Notes on Amana and the Tree-House

Amana was a most peculiar village, and like Yo-ya-ka was built on an extremely narrow ridge, so narrow indeed that we could not pitch our fly-tent there, but slept in a house the front part of which overhung a precipice. The house commanded a most lovely view far away into the valley, the slopes of which were covered with dense wood. We could see the river flashing at intervals through the greenery; it must at least have been 1500 feet below us, but the roar of the torrent came up to us with great distinctness. As we approached Amana our carriers suddenly put down all their loads and would not enter. On being asked why, they said that some time before the chief of Amana had killed one of their people.

We went in and made the acquaintance of this worthy. He was rather a personable character, quite bald, and with a very noble forehead, but, like most of the more degraded aborigines, he could not look the white man in the face. On hearing of our approach he became frightened and retreated to a tree-house, one of the most remarkable curiosities which we saw

in New Guinea. In the village was a large tree, the trunk of which reached up about 20 feet bare of branches, and then the main stem divided into a fork. Among the branches were two platforms. To the first there was a very rude ascent, a rough ladder consisting of two uprights with rungs placed at an angle of at least 65 degrees. Above that was the second platform, forming the bottom of the house, which was reached by steps, very narrow, but not so far apart as the steps of the lower ladder. The tree-house is not uncommon in New Guinea, but it is very exceptional to find two platforms. The uprights and ladders were made of bamboo, and the rungs were made of boughs cut anyhow with walo, a species of cane which grows to a length of 20 feet, and is used for lashings. Each cane is the size of a thick pencil, and has a spiky outer cover. This is peeled off when the cane is ripe, and it is then split, an operation requiring great dexterity, and one which can only be performed by the Papuans themselves, for none but a native could split a 20-foot cane cleanly down its entire length.

The higher platform which supported the house measured about 12 feet by 6 feet; it was made of bamboo cross-pieces, interlaced with bark. The roof was covered with grass, and the only aperture was one small door, over which the thatch came closely down. There was just room for a person to crawl in.

We had considerable difficulty in inducing the chief to leave his retreat, but at length he summoned up sufficient courage to come out and speak to us.

At Amana we noticed no conical houses, the dwell-

ings being for the most part of the kind known as the "lean-to."

We noticed various other curiosities at Amana. One was a rather mysterious grave, just outside the village at the point where the carriers put down their loads. This place, which for some reason or other was regarded as sacred, was surrounded by a low stockade, but no attempt was made to keep the enclosure—which was quite overgrown—in order, and we learned nothing regarding its origin, for the Papuans are a people without a history.

The people wore an ornament, which we also noticed among the Tugeri in Dutch New Guinea. This was the oval, highly-polished grey seed of a species of grass which grows at Amana. The villagers wore the seeds on strings or singly in their hair. The Tugeri string the seed into necklaces and wristlets. As the grass grows only at Amana, it is a certain proof of communication between the Tugeri and the hill tribes.

The Lunatic at Amana

In the village of Amana we met the only half-witted Papuan we saw in New Guinea. He had been imbecile from his birth, and at the time we saw him his age was probably from 28 to 30, but it might have been less. He could not speak and was very deaf. He was of a very pale coffee colour, and might probably have stood about 5 feet 6 inches, but he was strangely bent and very thin. He communicated with his fellows by means of signs, and was regarded in the village as quite an amusing character. In fact,

to the best of my belief, he was maintained by the villagers simply because of the amusement they got out of him. He had a mother alive who was quite sane, but he himself lived alone, and was very nervous about coming out to see the white man. The tribesmen, however, were determined to show him off, and after a great deal of persuasion he was brought up to me.

They made signs to him to dance, and this was evidently a common pastime, for, without the least reluctance, he began his performance, which was unskilled enough and slightly repulsive. His dancing consisted of wobbling the head and feet at a tremendous rate and putting out his tongue. As soon as he began to show off, the Amana people sat down in front of him and enjoyed the spectacle. He took his mission of purveyor of diversion with deadly seriousness, and all the time he danced he made a strange mumbling noise. He was popular with the children also, and they would bring him out and set him dancing whenever they felt dull. For clothes he wore the usual native costume of the mountains, except the tight belt, which was perhaps too much an adjunct of dandyism for this unfortunate to affect. Not only would he dance at the word of command, but he would take off all his clothes to order, and carrying his meagre garments over his arm, he would run from one end of the village to the other clapping his hands in slow time. It was considered superexcellent fun to make him dance with his clothes off, and all the time the Philistines made game of the poor creature, who, however, was no Samson!

Another primitive jest was to give him unpalat-

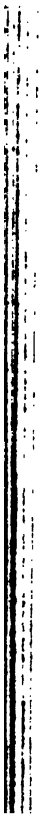
able and impossible things to eat, but they had the decency never to let him actually eat a gift of charcoal—a not uncommon present—although they allowed him to come within an ace of doing so. He was tremendously greedy, and when cooking or eating was going on he would try to grab all he could. As soon as we began to prepare a meal he lost all fear of us, and pursued his usual tactics. He would snatch at our plates like a dog, seize as much as he could, and long before one could say that curiously cumbrous phrase "Jack Robinson," he would have it all stuffed into his mouth. If we told him to go away, he would remove himself for about five yards and sit down. In a very few minutes he had crawled up again and would make another raid upon our dishes.

We had some most interesting conversations regarding the lunatic with Ow-bow, who told us what was to be known of his family history. Ow-bow said descriptively that he was "bad inside," and added oracularly, "Olana lakuana," which means, "Head no good." We asked particularly if such a person would have been allowed to marry, whereupon Ow-bow gave an emphatic negative, saying, "Wabeeni daba kadena enai makana affi?" which is literally, "Woman what kind this fellow have?" ("What sort of woman would have this fellow?") The poor unfortunate was, however, extremely harmless. One could do what one liked with him, for he was never known to lose his temper.

"*Aug. 13th.*—Several carriers came, and we started at 10 A.M. and arrived at Foula at 3 P.M. It is a

1.—LOOKING DOWN A NATIVE HANGING BRIDGE.

2.—A SIDE VIEW OF THE SAME BRIDGE.



fairly large village for this part. They speak quite a different language from that of the Kebea and Dinawa. We rigged up a temporary verandah for our work. To-day we got a few good butterflies, but few moths at night; too much light. The height of our camp here is 2600 feet. We bought a pig to-day, killed it, and found it quite a treat; the meat was very good, and it afforded us fat for cooking."

Foula Village

Just before the entrance to Foula village we noticed the evidences of a great land-slide, which had left the ridge of rock, along which our path lay, as clean as a piece of china. The path had thus been rendered perilous, but the natives had had the sense to put up a light bamboo rail on each side, and this was extremely fortunate, for there was hardly room for the foot, and a slip would have certainly meant disaster, for the descent was sheer on each side for several hundred feet.

Foula is one of the sweetest villages imaginable. There are really two villages—the upper and the lower. The upper one contains about fifteen to twenty houses arranged in a circle, and the approach to it is through an avenue of beautiful crotons planted by the natives. To reach the lower village one had to descend for about ten minutes. This other hamlet, which is picturesquely situated close to a fine waterfall, is divided into two parts, a narrow ridge connecting the two. The houses in this village stand in a

line, and are very substantially built. Past them runs what looks like a road of well-trodden red clay, which seemed as if it had been rolled, and the whole place had the appearance of being beautifully kept.

The Foula people were of a Jewish type of feature. Their language differs considerably from the dialects we had heard.

CHAPTER XII

THE UNEXPLORED: AMONG PAPUAN PEAKS

Still Higher in the Owen Stanley Range—The Road to Mafulu—Beauties of the Forest—The Hill Step—Curious Habit of Walking acquired in Abrupt Ground—Cold at High Altitudes—A New Camp built—Alpine Signs in Insects and Flowers—Routine Work—Food runs low again—Native Thieves—Followers discontented—They fear the Hostile Mafulu People—Daily Threats of Desertion—Strict Watch—My Rule for Night Visitors—Compulsory Carrying of Torches and Disarming—Weirdly Picturesque Night Scenes—Further Privations—Bird of Paradise Soup—Ugh!—Decide to depart—Natives burn down Camp to ensure our going.

CHAPTER XII

THE UNEXPLORED: AMONG PAPUAN PEAKS

FROM the Kebea to Mafulu it was a five days' journey along the most rugged, toilsome, and difficult path. At one point one has to traverse a ridge which turns in a half-circle, and at the very top it is scarcely more than 6 inches wide, sheer precipice running down on each side. The dangers of the road were, however, somewhat compensated for by the magnificent view which one could enjoy from that point, and a butterfly-collector had also something to reward him. As we rested there, after having passed the most dangerous part of the ridge, along which we had to crawl on our hands and knees, I saw some of the rarer *Papilios* in fairly large numbers. Unfortunately, they were all rather worn specimens and of no value for the collecting-box, and I was sorry that I was not there earlier, so as to have captured these butterflies when they had freshly emerged from the chrysalis. They measure about 3 inches across from wing to wing, and are of a most brilliant pea-green, shot with a lovely mauve sheen on the under wings. The descent was very, very steep, especially the last portion of the road, where it descended abruptly to the creek. We had to hold on by roots and vegetation and to look most carefully after our footing, for a false step might have sent us down a precipice, falling sheer for 800 feet.

But for the support of the growing things we could not have made the descent at all, and the marvel was how our carriers managed it with their heavy loads. They seemed, however, quite unconcerned, and took no notice of the dangers besetting them. They would never think of lightening or setting down their loads, but moved on in a zig-zag, catching hold of the creepers as they went, without effort. The bed of the creek, when we reached it, we found to be full of boulders. While my men took a bath, I examined the gravel in the river-bed, for it looked tempting for the mineral prospector. By way of experiment, and to pass the time, I washed out a panful or so of gravel, and noticed a few colours in the sand that indicated the presence of gold. It is not improbable that the prospector who worked that creek would find considerable trace of mineral wealth. Here I saw the indigenous bread-fruit, about the size of a cricket ball, and full of kernels smaller than a chestnut, only with a thinner rind and of a chocolate rather than a red-brown colour. The natives boil it, and we found it floury and very palatable, though slightly bitter. The Papuans are very fond of this fruit when they can get it.

We ascended, by way of one of the two villages known as Foula, for four hours, the climb being all the way through dense forest soaking with the humidity of the atmosphere. Even the hot sun seemed scarcely to affect the prevailing damp. The rocks which beset our path were covered with lovely-shaded begonias, ferns, and trailing creepers, intermingled in richest profusion of golden tints. In the early morning the forest is alive with bird-life. The trees are of

ONE OF OUR CAMPS IN THE OWEN STANLEY RANGE.

Note the line of mist across the picture just below the summits.

strange magnificence, particularly the mountain Pandanus, with its aerial roots, which cover an immense space and all converge into one stem 60 feet above the ground, whence the trunk runs up perfectly straight. Around us everywhere were also tree ferns, some of them rising to 30 feet in height, and besides these there were the enormous *Lycopodiums* with leaves 10 feet long. These luxuriant forms of vegetation were thickly clustered upon the trees, and some of the masses must have been of enormous weight. They displayed a glorious profusion of scarlet, which had taken full possession of its supporting tree, for far above the domed mass of this superb parasite one could see occasionally large clusters of brilliant blossom here and there. More humble, but still very beautiful, was a little fern, similar to our Parsley Fern, which was distinguished by an exquisite iridescent blue all over the upper side of the leaf, while on the under side those fronds that were in seed showed a most brilliant golden yellow. Parrots great and small flashed about us, and now and then we caught a glimpse of the white cockatoo with the yellow crest that is found all over New Guinea. As we passed among the feathered colony, all these birds set up a tremendous screeching. The cockatoo, as I had occasion to know at a later period, can, when wounded, bite most cruelly. Of animals we saw little, for the inhabitants of this region are mostly arboreal and nocturnal. There are several species of the smaller animals, including the tree kangaroo, of which I wished I could have secured some specimens. These are born very imperfect, and are placed in the pouch;

when they are once there the mother squeezes the milk into their mouths.

We found the village of Mafulu very small and the people extremely shy. One or two men were about, and the women were at work in their gardens. We sent on some of our men to discover the best possible camping-place, a work of considerable difficulty, for there are no plateaux in the Owen Stanley range, and the contour of the ground, as I have already indicated, is terribly abrupt. In fact, when one has travelled for some weeks in these regions, a peculiar habit of walking is acquired, which is somewhat equivalent to a sailor's sea-legs. This acquisition the traveller does not find out until he returns to low, flat ground, when he suddenly realises that he is stumbling at every step, and some practice is required to recover the ordinary method of locomotion, and he has to break himself of the habit of lifting his knees almost to his nose. About an hour's march from the village the men discovered a fairly level spot, and by the time we came up they had, with axes and knives, begun to cut a clearing of the undergrowth to enable us to pitch our camp. We set up our own fly-tent and the natives' two tents and built a large fire, for it was very cold and the boys were beginning to feel the climate of that high elevation. Indeed, during our whole stay at Mafulu we felt the stress of the climate severely. That first night was very chilly, and it was necessary to serve out blankets to the natives in order to enable them to withstand the cold. They slung their hammocks on sticks or trees, sometimes one above the other, and close to these they

built large fires and kept them going during the night. The sky at night was clear and starlit, but the morning brought clouds, and mists enveloped the forest, often accompanied by heavy rain that made the place most depressing. The view was entirely shut out; everything was dripping; our clothes were very soon saturated, and the whole situation was most uncomfortable.

The humidity of that region was proved by the fact that the under side of the leaves of various plants was covered with moss.

The day after our arrival we began the building of a proper camp. We felled trees, erected a stockade and also a platform some little distance above the ground; over this last we threw the fly-tent, making a floor to it of split bamboo. Inside the tent we arranged to have a fire in the native manner. We put down a wooden frame, inside which we laid earth closely patted down to form a hearth in the Papuan style. After building our abode we had to discover another spot where we could carry on our work at night. When this was found, a further task awaited us, for the forest came so close that we had to open up a space to enable our lamp to shine out and thus attract the moths. To do this we had to fell more trees, and the precipitous nature of the ground rendered our task all the harder, for once when we had allowed a large newly-felled trunk to slide, it got out of hand and careered three or four hundred yards down the precipice, taking other trees with it. Finally, however, we managed to open up a gap towards the camp, which left us an excellent

clearing for scientific purposes. Here we built our collecting verandah, and thither we repaired every night, a little journey requiring some self-sacrifice, for as we went those dreadful leeches I have already described attacked our feet and legs unmercifully.

We had to do a good deal of our work unassisted, for our natives were not willing to accompany us, as they feared the Mafulu people. We knew perfectly well there was some risk, and never went up to the verandah without taking our revolvers. As we worked there through the small hours, our position was brilliantly lighted up by our lamp, so that, had the Mafulu people wished to do so, they would have had every opportunity of taking a good aim at us. Fortunately, however, they did not realise that while our lamp made us very visible to them, it rendered them entirely invisible to us, and although we sometimes felt rather uneasy, we never received any unpleasant reminder in the shape of a hurtling spear. Had they known, however, how entirely we were at their mercy, we might not have escaped.

As we pursued our collecting here, it was interesting to note the Alpine signs in insects and flowers. On the trees grew a very fragrant rhododendron. Moths were plentiful, but butterflies were not, for everything in this dense forest was struggling for light, and the butterflies had accordingly retired to the tops of the trees. Here I counted at least twelve different species of paradise birds.

We had not been long at Mafulu when we were faced with another trouble. Our food supply began

SOME UNKNOWN SPECIES DISCOVERED BY THE AUTHOR IN NEW GUINEA.

1.—A new Reptile—Lygosoma Pratti. 2.—Another new Reptile—Tropidolaemus Stanleyanus. 3.—A new fish of the Gobioid Genus *Rhiacichthys*.

By permission of the Zoological Society of London.

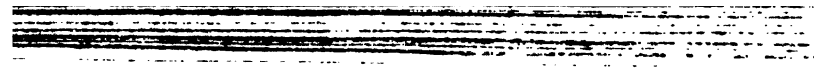
to run low. We found that the tinned provisions had been tampered with, and suspected native thieves; our suspicions one day being confirmed, when our dog Yule brought in from the forest two empty meat tins which had been broken open with the axe. This evidence was incontestable, for we ourselves always used the tin-opener. Of course, when we taxed our Papuans they were ignorant of the whole affair. This theft did not improve our larder; meat ran out, we had very little tea and no sugar, only a scanty supply of flour, and, worst of all, no salt. We were accordingly dependent upon sweet potatoes and yams, which we purchased from the Mafulu people, and occasionally a few bananas were obtainable. The boys soon began to grumble about the cold and lack of food, but the real reason of their discontent was, of course, fear of the Mafulu people. Every day deputations waited on Sam and myself and threatened to leave. It was evident that the discontent was stirred up by two ringleaders, so we found out who these were and talked to them very severely, telling them they might go; but two men would not dare to venture back to their own village through a hostile country, so, of course, our permission to leave was not taken. These troubles were very annoying, for we wanted to remain as long as we could, as we were getting admirable specimens, but about the fourteenth day of our stay matters had come to such a pass that we had to give the men a definite promise that we would leave in a week.

With such a state of things constant vigilance became necessary, and we had to divide the nights into watches. Sam would take three hours and

then I would take three hours, and some of the natives were always awake for fear of other natives. It was very lonely in camp, but we passed the time smoking and watching a few sweet potatoes baking in the embers. As our own fellows were disaffected, it was necessary also to keep them under constant observation. From the tent we could watch their quarters, and Sam made a bamboo bed in the men's shelter. They, poor fellows, had rather a rough time of it, apart from their fears and discontent, for one night a tremendous deluge of rain swamped their quarters. Next day they went into the forest and cut a large quantity of bamboo leaves, with which they made a splendid rain-tight roof about 6 inches thick. As it would have been a pity to have left without doing our best to get specimens of the paradise bird, we sent all our shooting boys away and allowed them to take a tent with them. The long-tail paradise birds frequent the Pandanus trees when they are in seed, and when the shooters found a tree in that condition they would camp near it and lie in wait for the birds. While this little expedition was out, Sam, Harry, myself, and a boy remained alone in considerable anxiety, for while the guns were away none of us had any sleep.

I cannot say that we had any actual threats, but the country round about us was disturbed, and great numbers of the Kabadi people, who had been to trade with Mafulu, and were returning home, began to stream through our camp. They came through in strings, at intervals of an hour or longer. Some of them carried pigs that they had received

THE AUTHOR AND SOME NATIVE COLLECTORS.



from the Mafulu people after dances and entertainments. These companies consisted of men, women, and a very few children. Several of them were painted as for a festival, and they always passed through the camp as quickly as possible, taking no notice of us. The Mafulu people used to visit us a good deal with the ostensible purpose of trading, but they always took care to come armed with spears. This I did not like at all, so I directed them to lay down their arms before they entered, and if they came to visit me after dark, I said they must light torches and hail me from the edge of the clearing as they approached. This they did, but they seldom came at night after I had put this restriction on them. The few times, however, that they did come with their torches, the sight was weirdly picturesque as the lights came glinting through the trees, and then congregated at the edge of the clearing, the flickering glare throwing up the lithe, bronze figures of the warriors into fine relief as they stood there waiting for permission to enter the white man's enclosure. They seemed to have a lot of intimate conversation with our people, although only one of our men knew their language. They were, however, content to do their talking through the interpreter.

Before we left, our food had practically run out and we were feeling the pinch very badly. Both Harry and I were growing extremely thin, and we were always taking in reefs in our belts. As regards weight, however, we were in fine walking form. The nerves of my people got no better. Sometimes they would hear the Mafulu people calling, and then they

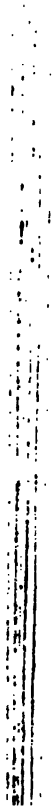
would be on the *qui vive*, thinking something was about to happen; they were, in fact, like men living on a volcano. Before we left we were in such stress that we were compelled to try bird-of-paradise soup; it was truly abominable, and after the first spoonful we got no further.

All our things were packed, and Harry and I were inside taking the fly-tent down, when suddenly we heard a terrible uproar among the carriers. I rushed out, but by the time I got into the open I found one of the native houses in flames, and in less than ten minutes the whole camp was ablaze. I immediately demanded of the boys what they meant by this act, but they seemed to look upon it as a great joke, much as youngsters at home would regard a bonfire. It is not improbable that their object was to compel me to go, for the previous day my shooters had brought in twelve paradise birds, at which I had shown great delight, and they probably thought that I should be tempted to prolong my stay. It is just possible that I might, for the last days were the richest we had had so far as the capturing of birds and specimens was concerned. When the camp was still roaring up in flames we departed with our few remaining followers, the main body having gone on already with the chief part of the loads. One thing that makes me sure that the firing of the camp was deliberate was that the outbreak occurred in two or three places simultaneously.

CHAPTER XIII

LAST JOURNEY TO THE COAST

A Dangerous Stream-Crossing—Babooni—Sunshine once more —Successful Work—Poor Fare—Messengers to Ekeikei—The Tree-Cabbage—Method of Cooking Tree-Cabbage—A Great Curiosity—Spiders' Webs as Fishing-Nets—Dancing Festivals —Back to the Kebea—Our Bean Crop—A Papuan Parliament —We obtain Credit—A Wife-Beater—My only Act of Perfidy—The Journey to Ekeikei—Back to the Land of Plenty—Last Visit to Epa—Mavai unfriendly—He is talked over and supplies Carriers—Example better than Precept—The Coast again—An Accident—The Natives drink Sea-Water—Good-bye to the Mountaineers.



CHAPTER XIII

LAST JOURNEY TO THE COAST

FROM our camp at Mafulu a march of from five to six hours brought us to Foula. On our way we rested at a little village, one of those belonging to the Foula people, but situated on the opposite ridge. There I missed my prismatic compass, and was rather concerned, but I ordered a thorough search in the bags, and was glad to find it. At this village the natives were reluctant to move on, and I believe that they were aware we were about to have bad weather, for before we had gone much farther we were in the midst of a deluge. I accordingly paid off all the unwilling carriers and allowed them to return home, hoping to get more at Foula. There they told us that as the Delava River was swollen there was no crossing, so I went down to inspect it myself and found it in a most terrible state. The stream was full of tangled mangrove roots and treacherous with slimy ooze. It was a horrible and uninviting flood to enter, with its foul waters and its mosquitoes, and one knew that it was a veritable fever-trap. In we had to go, however, the natives making a terrible splashing. For the most part we were wading up to our hips in water, picking our way as best we could across the tangled mangrove roots, and occasionally slipping down between them to a depth of

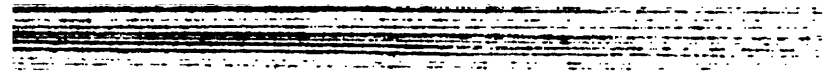
two feet, these slips threatening to take Harry out of his depth. For part of the way we had to swim.

When we had crossed we took our way to Babooni, along a track which ran up a valley and then wound up steep precipices. There was no actual village there, but only a camp which had been built by Sam on the extreme edge of the ridge. The situation was grandly picturesque, for this ridge terminated in an abrupt precipice, falling several hundred feet, and having the appearance of a huge headland thrust out into the valley. On each side the cliff came to within a few feet of our collecting verandah, and looking down from it we could see the confluence of three silvery streams, winding through charming tropical vegetation. Babooni would have been an ideal spot for a picnic. There we spent three weeks and had wonderful success in our work.

Except that we were in daylight and amid delightful scenery—a welcome change from the awful gloom of the forest at Mafulu—we were, as far as living went, no better off than we had been on the higher ground, and our staple food was still sweet potatoes; but it was something to have the sun again, and altogether we were conscious of a reviving feeling of exhilaration at Babooni. The *Drepanornis Albertisii*, one of the finest of the birds-of-paradise, abounded, and we secured a considerable number of specimens on the opposite hill. I also secured a fine series of the *Ornithoptera primus*, the bird-winged butterfly, which is distinguished by its beautiful green and velvet-black wings, with brilliant golden fore-wings, the under side of which is black. It is very partial to

A SPIDER'S WEB AS A FISHING-NET: A STRANGE NEW GUINEA DEVICE.

A very huge and strong spider's web, common in New Guinea, is used by the natives as a fishing-net. They set up in the forest a framework, bent as in the picture, and leave it until the spiders have covered it with a web in the manner shown.



the flowers of the tree Spirea, among the foliage of which its black and gold wings can continually be seen twinkling. Its colour contrast, indeed, gives it a most remarkable appearance in flight.

But scientific work cannot be done on sweet potatoes alone, so I sent Wei-Yah and five men to Ekeikei to replenish our larder. They took a week on the journey, and on their return reported that the Ekeikei camp was safe, but there had been thefts from the stores at the Kebea. The foolish fellows had come back without salt, and as five men cannot carry very much, we were only a little better off than we had been. We were also in dire want of "trade," and there would be fairly long accounts to settle with our carriers for the rest of the journey, the Foula men having exhausted all our trade when we paid them off at Babooni. In our straits, however, nature provided us with at least one delicacy, and we shall always remember Babooni gratefully for its tree-cabbage. These edible leaves grow on a small tree like a sycamore, and the manner of cooking is as follows: Each leaf is plucked separately, and when a sufficient number has been got together they are tied up into neat packets, bound round in banana leaves and cane string. Then stones are collected and heated on a large wood fire, and on the top of the hot stones the bundles of cabbage are placed, and over them the natives lay more banana leaves to a depth of about two feet, and above all another layer of hot stones. In about one hour the cabbage is cooked, the outer wrapping is taken off, and the delicacy is served on a banana leaf or a dish. It is a perfect god-send to the half-starved traveller.

From Babooni we returned to the Kebea, varying our route so as to include the village of Waley, which we entered during a heavy rainstorm. Waley is a pleasantly situated village, occupying the whole of one side of a hill, where a large clearing had been burnt out and planted with sugar-cane and bananas. The natives had also laid out extensive and well-planted gardens.

One of the curiosities of Waley, and, indeed, one of the greatest curiosities that I noted during my stay in New Guinea, was the spiders' web fishing-net.

In the forest at this point huge spiders' webs, 6 feet in diameter, abounded. These are woven in a large mesh, varying from 1 inch square at the outside of the web to about $\frac{1}{8}$th inch at the centre. The web was most substantial, and had great resisting power, a fact of which the natives were not slow to avail themselves, for they have pressed into the service of man this spider, which is about the size of a small hazel-nut, with hairy, dark-brown legs, spreading to about 2 inches. This diligent creature they have beguiled into weaving their fishing-nets. At the place where the webs are thickest they set up long bamboos, bent over into a loop at the end. In a very short time the spider weaves a web on this most convenient frame, and the Papuan has his fishing-net ready to his hand. He goes down to the stream and uses it with great dexterity to catch fish of about 1 lb. weight, neither the water nor the fish sufficing to break the mesh. The usual practice is to stand on a rock in a backwater where there is an eddy. There they watch for a fish, and then dexterously dip it

up and throw it on to the bank. Several men would set up bamboos so as to have nets ready all together, and would then arrange little fishing parties. It seemed to me that the substance of the web resisted water as readily as a duck's back.

Waley was also a place for dancing. Thither the tribes came for great Terpsichorean festivals, and invitations used to be sent as far as Foula by special messengers to bid the Foula people to these entertainments. As we passed Babooni we had met these couriers on their way to tell the Foula people about a dance that was shortly to be held, and inviting them to come and bring all their fine feather-work—the Papuan dress-suit—and all their pretty women. These dances often last for a week, and the revellers feast during the day and at night dance by torch-light. During the time we were in camp the noise of dancing and singing never ceased, and the fat pigs were continually being killed. This indispensable adjunct of Papuan life is solemnly divided according to ceremonial custom, and certain parts are reserved for the leading degrees of the tribesmen. The guests receive the more honourable portions, and in this instance the chief from Foula would receive the most honoured part of all.

The tribesmen come to the dance fully armed, bearing spears 10 feet long, which were often splendidly decorated with birds' feathers; over the point would be slung a pod full of seeds, which rattled as the spear was brandished in the dance.

When we left Waley we pursued a very winding path through steep valleys, zig-zagging up the face of

precipices and along the tops of almost razor-like ridges.

On our return to the Kebea we picked a very fine crop of beans of our own sowing. The Papuan bean is broader than ours, and is gathered at a rather later stage; it is largely cultivated in the native villages. Once at the Kebea we had seriously to face the problem of getting down to the coast. Here we were with all our collections on our hands, as well as our stores and "trade" to meet the charges of our carriers none too plentiful. Obviously, the right plan would be to get the natives to engage to carry for us right down to Pokama on Hall Sound, for if we should be faced with the necessity of paying off a gang at Ekeikei, we should be cleaned right out of the equivalent of ready cash. I opened negotiations tentatively, and allowed the idea to get wind among my followers; then the thing began to be mooted in camp conversations, and the men would go off to discuss it with their women-kind. At first they were in great doubt, saying that it was very far, they did not know the country beyond such a place, and they would be very frightened in strange districts, especially on their return. At our invitation they gathered for a great conference, and I may be said to have summoned a Papuan Parliament, which immediately went into committee to discuss ways and means. I sent out Ow-bow, and several reliable fellows whom we knew to be willing to go all the way with us, to induce the others to come to the congress, and when we got them together we told them that if they would go to Hall Sound with us, we would make each man a certain

FISHING WITH THE SPIDER'S-WEB NET.

The natives are here using the curious net prepared in the manner shown in another picture.

payment, enumerating the different articles we were prepared to pay on our arrival at Pokama. We added that if any one preferred that his wages should include a preponderance of tobacco, or beads, or calico, over other articles, we should be quite agreeable.

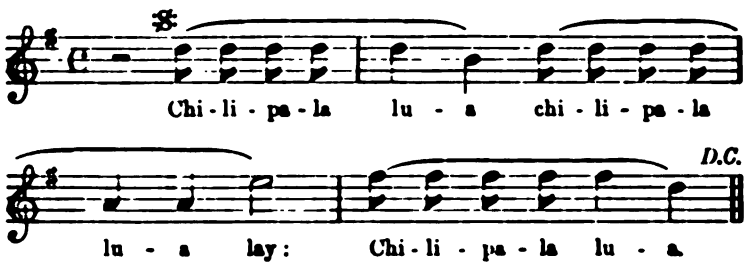
They gathered round our little house, some in and some out, and smoked the everlasting bau-bau, keeping up the while a quiet conversation. The women with husbands made difficulties, as was to be expected. They would say to any man who showed a disposition to join the expedition: "But we want you to help us in our gardens." One of the wives proved especially a thorn in our side. She was the worst woman we met in Papua, the possessor of a terrible tongue, and she was always setting the men against going anywhere. The other women disliked her heartily, and there were always rows when she came into camp. Not once, but twenty times, were we annoyed by these disturbances, for Gouba, her husband, believed in attempting to tame his shrew, although, alas! he never succeeded. His methods were simple and drastic. He would pick up a billet of wood, when she was half-way through a tremendous scolding, and fetch her a terrific blow over the back. Thereupon ensued Pandemonium; the other men and women would gather round jabbering, but they made no attempt to stop the beating once it had begun. The unfortunate man had another wife, and the scolding one was not always with him, but when she was there was trouble. Gouba was willing enough to stay with us, poor fellow, but Mrs. Gouba was always on the *qui vive* for some village dance or other. Her

social engagements invariably clashed with Gouba's industrial projects, and between them they made the camp very hot. To see her running with Gouba after her was a memorable sight. Of course, no Englishman likes to see a woman knocked about, but from what Ow-bow used to tell us, I am persuaded that Gouba was a sorely-tried man, and I should not be surprised to hear that by this time he has arranged a divorce on Henry the Eighth's plan, and that Mrs. Gouba is now no more.

But to return to our Parliament. I finally carried my point and engaged the carriers, but, alas! it was only by committing the only act of perfidy which I can lay to my conscience in all my dealings with natives. I found that if we were to get out of the country safely I must offer some further inducement, other than the ordinary articles of trade, and accordingly, although I had no intention of contravening the Government regulations so far, I said that a gun would be included in the wages of those who went down to Pokama. When the time came for this promise to be made good, I simply explained that the Government would not permit me to give them the gun. They acquiesced quite cheerfully, and consented to receive compensation in other articles. That there was no discontent or resentment, I am persuaded, and I had ample proof of this in my final parting from my followers, which I shall relate in its proper place.

We now returned to Ekeikei, and on arrival there passed from the land of starvation to the land of abundance; hunting was once more possible, and

early on the morning after our arrival we sent out our shooters, who came in loaded with cassowary, Gaura pigeon, wallaby, pig, and other spoils. The natives were in clover once again, and had a glorious time building fires, dressing the game, and preparing the food, for your Papuan's greatest pleasure is to eat as much as he can, and in the shortest possible time, to sing, and then to sleep. Meals of Homeric generosity were devoured, and thereafter our people sat round their camp fires singing the beautiful mountain melodies of which I have already spoken. The prettiest and most soothing of all their tunes was the following, which has often with its gentle cadence lulled me to sleep in the wilds:—



At Ekeikei we had, of course, to take up many additional loads of baggage, and the resources of our staff, already severely tried, threatened to prove entirely inadequate. Further recruits were not forthcoming, so all the baggage had to be re-distributed and the bags repacked. Even when this was done, and an additional weight apportioned to each man, we found that ten carriers more would be wanted, but as these were not obtainable I decided to leave Wei-Yah with the

remaining baggage until I could get down to Epá, where I trusted that my old friend Mavai would send it in relays for me to Oo-fa-fa.

At Epa things looked rather hopeless, for not only did five of my carriers bolt, leaving me saddled with their loads, but Mavai proved a broken reed. My ancient ally was no longer a white man, and for some unexplained reason had turned very uncivil. When I asked for carriers he said he had "no people," but his village seemed as populous as ever, and the same numbers streamed in from the yam patch in the evening. I had a big talk with him over night, but could make no terms with him. Next morning Harry and I again had a long quiet talk with his Highness, and at last he relented so far that he ascended his platform, but did not don the persuasive red coat. He waxed fairly eloquent, gesticulated wildly, and at last, about 7 P.M., things took a better turn, and the first carriers consented to engage with us. Then the right honourable gentleman resumed his seat, having spoken just over half-an-hour. Next day they sulkily picked up their loads and set out. Mavai himself, believing that example was better than precept, marched with the first detachment. He himself shouldered a load. Thus we got everything away with the exception of two loads, the carriers in charge of which sat sullenly in their house. Finally, Harry and I had to go over and make these two fellows pick up their burdens, and thus we took leave of Epa.

The journey to Oo-fa-fa was accomplished in very sultry, trying weather, through a country that afforded little shade. The ground was stony, broken here

A WEIRD TRIBAL DANCE.

The central figure wears a huge head dress or bird of Paradise plumes surmounted by a gigantic aigrette of parrots (feathers to be seen in the background). The rank and file wear grass fibre head dresses.

and there with patches of wild oats and groups of eucalyptus trees, which ran up to a height of about 30 feet, and were conspicuous by their silvery bark, which was constantly peeling off like tissue paper.

Having once undertaken the job, Mavai was as good as his word, and took us down to Oo-fa-fa, where we got boats. There I had a nasty accident. We put up for the night in a hut belonging to Mr. Jack Exton, the sandalwood trader, a very industrious and indefatigable man, who has made good roads to haul his timber down to the coast, and is very popular with the natives. "Jack," as we called him, entertained us very kindly at his camp when we first went to Epa, and gave us every assistance in his power. During the first night at Oo-fa-fa I was sitting on a native hammock in the hut, when suddenly the cords gave way and I fell backwards upon a sharp stump and hurt my back severely. My leather belt saved me from any very serious injury, and there was fortunately no penetration, but the pain was intense for three or four days. I fomented the bruises with hot water at Oo-fa-fa, and managed to get down to the canoe next day, but I had to lie still during the rest of the voyage. At Pokama I was greatly relieved by the application of Elliman's Embrocation, but I had difficulty in walking and was not free from pain for ten days.

At the Sound some of the native carriers, those paying their first visit to the coast, drank great quantities of salt water without evil consequences.

The canoe voyage was rather uneventful. Our flotilla was not numerous enough; the canoes we

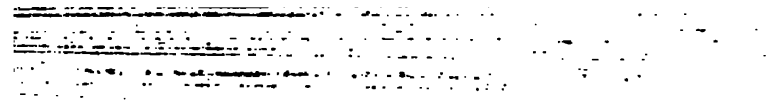
had were overladen, and, accordingly, we sent some baggage overland to Pokama. At that point the Rev. Mr. Dauncey received us with great hospitality, and with him we stayed while we were paying off our natives. To Ow-bow I entrusted the wages of the five rascals who had run away from us at Epa, and I have no doubt he paid it over scrupulously.

After our business was concluded, the mountain people went away with very happy faces, and bade us good-bye, cordially hoping that they would see us again, and saying that on my return, if I sent for them, they would come down to the coast and carry me up-country. Some of them even wept as they took leave, and I must confess that I was genuinely sorry to part from my warm-hearted, good-natured followers, who had up to the last served me faithfully, in spite of occasional fits of refractoriness, which, after all, were easy enough to understand. It said a good deal for them that they followed the unknown white man as cheerfully as they did.

CHAPTER XIV

A FORTY-MILE TRAMP BY THE SHORE

A Comfortless Voyage—A Forty-Mile Tramp along the Coast —Wonders of the Beach—Armies of Soldier-Crabs—A Crocodile River—A Dangerous Canoe Voyage—At Port Moresby—A Pathetic Incident—Last Days of our Stay in New Guinea.



CHAPTER XIV

A FORTY-MILE TRAMP BY THE SHORE

At Pokama we got on board a vessel very heavily laden with sandalwood. I did not notice how perilously deep she was in the water until after we had put to sea. This promised a voyage of great discomfort, and Harry shortly became very sick. Partly on this account, and partly because we wanted to see a certain part of the coast more minutely, we went ashore in a small boat, and slept that night at the house of a coloured teacher in the service of the London Missionary Society. Next morning we set out on foot for Manu-Manu, forty miles distant, a long and very toilsome tramp, often rendered doubly difficult by the uncertain sands of the beach. Where the tide had left it wet we found it as firm to walk upon as a bicycle track, but in the dry sand we often sunk to our knees. Harry, especially, suffered severely, and his ankles were sore for a long time after. The heat also was terrific, and added greatly to our discomfort; but the walk was not without its interest and its diversion, although in point of scenery it was rather monotonous. Very conspicuous on the fringe of the coast vegetation was the true species of the shore Pandanus. Inland was dense forest, diversified with patches of grass and marshland. Our itinerary was as follows: Our

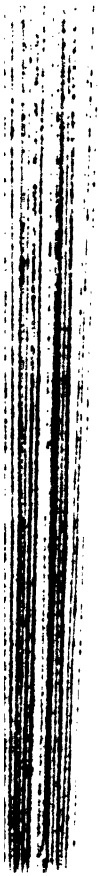
first stage was twenty-two miles from Giabada to Issu, the way being greatly lengthened by the need to follow the bend of ever-recurring bays, where the treacherous sand and the lack of shelter from the sun proved particularly trying. But at this part of the march we saw one of the most extraordinary sights of all our travels—many thousands of soldier-crabs traversing the sandy beach in detached, regularly ordered bodies that moved evidently by the signal of some common commander. These "armed battalions" stretched for miles, and no matter what figure they assumed—whether wedge, triangle, or rhombus—the dressing, so to speak, of the outer ranks was perfect, and would have put many a Volunteer corps to shame. Not a crab was out of line. The advance was fairly rapid, and was always towards the sea, for a distance of, say, two hundred yards. When the crabs come out of their holes in the sand they throw themselves into this compact formation probably for safety. There was no walking along the beach for them — scarcely a clear hundred yards for miles. When approached, they quickened their pace perceptibly.

The individual crab is small and has no shell. The spread of the legs would probably be 1½ inches, and the body is of a dark fawn colour, exactly resembling the wet sand of the beach, so that the creature's hue is without doubt yet another of Nature's adaptations for protection. It is remarkable also that it imitates only the wet sand, for the dry sand is of a dazzling silky whiteness.

At Issu we stayed for the night, and did our best

A SEA-COAST SCENE IN NEW GUINEA.

Some of the houses of Elevada, one of the pottery towns, may be seen by the sea.



to sleep, although the sand-flies were a great torment. From Issu we went on to Manu-Manu, a stretch of eighteen miles, and as we went we saw many sharks, who followed us close inshore and kept pace with us for a considerable distance, hoping in vain that we would be unwise enough to bathe. Some natives, who had followed us from Giabada, tried to kill them by throwing sticks.

Manu-Manu was our last halt before taking a canoe for Port Moresby. At the former place we found some men to assist us, and after spending the night there, and the best part of the following day in preparation, we embarked. At the mouth of the Manu-Manu River the crocodiles swarmed in the brackish water. This is the point where there occurred the fight between the natives and the crocodiles which I described in one of my earlier chapters. The canoe voyage that we made at this time was one that was only possible in fine weather, for there were many nasty headlands to round. The bays were very deep, and at the middle of the crossing from point to point we would often be ten miles off the land. Often, too, there were treacherous reefs to avoid, but fortunately we had moonlight after 2 A.M.; and so, sometimes sailing and sometimes paddling, we passed the villages of Boira and Borepada and reached Port Moresby at five on the evening of the day after we had left Manu-Manu. We arrived at the Government station just about the same time as the ketch which was bearing the bulk of our baggage.

We entered Port Moresby by the western entrance, which is not deep enough for large ships, and can

only be made by canoes. At Port Moresby we had intended to put up as formerly at Sam's house, but we found news of deep affliction awaiting our faithful head-man. His wife Heli was in terrible distress, for she had lost two children while her husband was with us in the interior. Both were boys, one of seventeen known as George, and the other a bright little fellow of ten called Foralis, who had been a great favourite of ours on our former visit, and who used to make himself very useful to us.

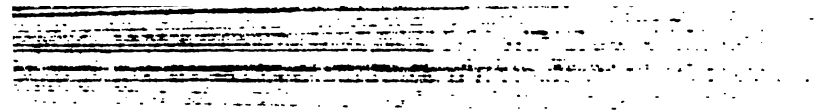
Poor George's death was a merciful release, for although he was so well on in his teens, he was a mere dwarf, and had been ill since his birth—a sufferer from the so-called New Guinea disease, that incurable and mysterious disorder which eats away the legs. It is believed to be a form of leprosy. He was a fleshless, melancholy little being, who lay in bed all day, hardly ever moving. He had, however, all his senses, and it was pathetic to see him pursuing his only amusement, playing with the petals of flowers and with different coloured papers, of which he sometimes made strings. Sam must have missed Foralis very keenly, for the youngster was at a most attractive age, and was beginning to be very useful in various ways. He had become quite a bold little horseman, and would often ride on errands for his father.

We spent five days at Port Moresby in the usual routine of packing for the homeward voyage, the first stage of which we performed on the small steamer *Parua*, which took us to Cooktown, where we were interested to note the relics of former mining activity,

for the place enjoyed a brief spell of prosperity, during which pretentious banks and public buildings sprang up, and still stand there as if in mockery of its absolute deadness. The time was when they took fifty tons of gold from the Palmer River, but those days had long gone by, although there is certainly plenty of mineral wealth in the hinterland that is entirely unworked, and excellent for tin miners especially. No effort has been made to work this, and it is difficult to get money for even a gold mine at the back of Cooktown, so much British capital has been lost there in wild-cat schemes. A once busy railway still runs fitfully to the Palmer River.

We stayed three weeks at Cooktown, and during the second week we witnessed a thunderstorm that transcended in violence the worst I had ever seen in South America, and that is saying a good deal. After an intensely oppressive morning, a black cloud came up from the westward, and the storm burst with startling suddenness. In less than half-an-hour every street was a veritable river, and the lightning, continuous and seemingly ubiquitous, was accompanied by cracking and rending thunder that could only be described as appalling. Fortunately, no one was killed, and the only damage was to the roof of Burns's store, which was struck by lightning.

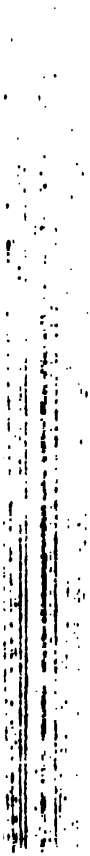
Save for the thunderstorm, our stay at Cooktown was utterly uneventful, and at the end of the third week we went down to Sydney and came home by the White Star line.



CHAPTER XV

NATIVE MANNERS AND CUSTOMS

The Papuan at Home—His Good Points—Physical Characteristics—Ceremonial Dress—Coast and Hill Tribes—Differences—Local Distribution of the Rami or Petticoat—Its Decrease in Length in the Mountains—Its Disappearance at Epa—Dandyism—The Priceless Chimani—The Shell Armlet—Household Constitution—Rudimentary Government—Courtship and Marriage—The Price of a Wife—Position of Women—Six Ways of Carrying an Infant—Meal Times—Weapons—Clubs—Their Manufacture the Monopoly of One Tribe—Weird Tribal Dances.



CHAPTER XV

PAPUAN MANNERS, CUSTOMS, AND SUPERSTITIONS

My object in visiting New Guinea, as the reader already knows very well, was not to prosecute the proper study of mankind, according to Mr. Alexander Pope, but it was impossible to live daily with those unspoilt children of nature without observing a good deal that was curious and noteworthy. I cannot pretend to be a trained ethnologist, and accordingly the notes that I have set down in this chapter on manners and customs make no pretension to any scientific co-ordination. I shall not therefore venture to draw conclusions, nor advance any theories such as would fall within the province of the professed anthropologist. My notes, too, were fragmentary, and often, owing to the stress of our journeyings and the pressure of the work which it was incumbent on me to prosecute, I had perforce to leave unrecorded at the time many things that might be useful to the student of primitive peoples. Such observations, however, as I am able to make, however incomplete, may safely be regarded as at first-hand, and it is probable that in the majority of cases they were taken under exceptionally favourable conditions for observing the people just as they are. During our journeyings in the interior we depended on native help alone, and the people whom we employed were not, one might

say, scared out of their usual way of life by the presence of a large body of white men. I and my son went absolutely alone into the wilds with no white lieutenant. We cast ourselves, as it were, on the hospitality of the aboriginal Papuan (and cannibal at that), but as the reader has seen, we had no reason to regret our draft on the bank of savage fidelity.

In my second chapter I described the warlike Tugeri of Dutch New Guinea, a tribe whose ferocity has been such a thorn in the side of British and Netherland officials alike. I certainly should not have cared to trust myself with the Tugeri, but with the gentler people of the south-east portion of the island there was comparatively no great risk. My first close acquaintance with the Papuans was with the Motuan tribe, who lived around Port Moresby, and my earliest acquaintances were made among the potters of Hanuabada. The Motuans are fairly numerous, numbering, it is said, about 1400 in the Port Moresby district; they may be taken as the type of coast natives in this quarter, and roughly, for the purposes of this account, I may distinguish between "coast-men" and "hill-men," taking the former to extend as far up as Epa. The Motuan men are well-grown, standing about 5 feet 10 inches on an average, the height of the women being from about 5 feet 6 inches to 5 feet 8 inches. Their features are very varied, and do not incline to any single type. The colour is of a rich bronze, and they are well and sturdily made. Most of them have mop-like hair very much frizzed, and some wear

1.—LOW TIDE AT HANUABADA, SHOWING THE PILE-BUILT HOUSES.

2.—SIMILAR HOUSES FROM ANOTHER POINT OF VIEW.

HANŬABADA WOMEN WEARING THE RAMI, OR PETTICOAT MADE OF LEAVES.

it tied up, while others have it short and curly, looking almost as if it had been cropped and lying close to the scalp. What we may call the "cropped" hair required little dressing, but to keep the mop hair in order they use a comb like a wide fork with five prongs and a fairly longish handle. With this implement they comb out their hair elaborately.

For ceremonial dances, and on festal occasions, they wear a wonderful head-dress made of cockatoo feathers, which looks, when it is assumed, like an enormous flat horseshoe, passing over the top of the head and slightly in front of the ears. It conceals the ears entirely when the observer looks the wearer full in the face.

The most cherished ornament, however, is the necklace of dogs' teeth, which is prized by the Papuans beyond any article of "trade" that the traveller can give them. Not even a knife or an axe is so welcome, nor can the traveller get so much work out of the Papuan for any steel implement as he can for one or two teeth. I knew of a case where a missionary, not with any fraudulent intention, but merely from a desire to test Papuan intelligence, manufactured imitation dogs' teeth very cunningly out of bone, and offered them to a native. The man, however, had too keen an eye to be done; he weighed the teeth critically in his hand for a moment, and then handed them back with a scornful "No good."

A further adjunct of their very simple costume is the armlet, which is knitted from grass fibre with a pointed cassowary bone. This primitive needle

has a hole running up its entire length through which the grass fibre is threaded, and then the ornament is woven either in a diagonal pattern or in straight horizontal stripes, with strands of various colours. They often actually knit it round the arm or the wrist quite tightly, and when this is done the ornament is permanent, and is never removed until it is worn out. Sometimes they wear a bunch of flowers stuck into the armlet, and these not particularly fragrant, but the Papuans are persuaded that it is quite otherwise, and, pointing to their bouquet, they say with delightful naïveté, "Midina Namu"—"Good smell." Alas! it is really the reverse, and the wearers of flowers in this manner are by no means pleasant neighbours.

They also wear anklets of feathers and strings of beads, and in some of their dances I have seen them decorated with huge bunches of grass, which hang from between the shoulders and sweep the ground. Some also affect a light band at the knee, and light cane anklets which rattle as they dance.

Indispensable to the men is the little bag which carries their few personal possessions: their betel-nut, their lime gourd and knife, the invariable adjunct of the delightful vice of chewing betel—as every traveller in the Malay Archipelago knows—and the "Paw-paw," a fruit with which a little European tobacco is often eaten. The coast women carry a much larger bag of knitted fibre, which may be best described by saying that it resembles a hammock with the ends tied together; in this they carry potatoes and wood, and sometimes it is borne upon

the head, the centre of it being brought over so that it is supported by the forehead, while the tapering ends hang down over the shoulders. At other times it is carried round the neck.

The chief costume of the women of the coast tribes is the extraordinary petticoat made of grass or of a wide-bladed weed, each leaf of which would be about 3 inches wide. The blades composing this garment fall down perpendicularly from a waistband, to which layer after layer is attached, until the "Rami" has that fine spread which used to be attained by more civilised women by a contrivance which I believe was called a "dress-improver." As we went inland and rose gradually higher and higher in the mountains, we observed that the "Rami" was growing shorter and shorter, until at length, just after we had passed Epa, it disappeared altogether; and one may reasonably consider the absence or presence of this garment as the great symbol of division between the coast natives and those of the highlands proper.

Among the men, both highland and lowland, the great symbol of dandyism is the "Chimani," or nose ornament. This is made from a section of a shell about ⅛ of an inch thick in the middle, and tapering most beautifully towards the ends. It is accurately made, perfectly round and polished, and a good example would be about a span long. A fine "Chimani" very often has two black rings painted round it, about 1 inch distant from the end. These things are manufactured by the coast people, and they drift by exchange through the whole country.

Very few young blades can afford to possess one, and accordingly it may be lent, either for a consideration or as a very special favour. The possessor of one of these ornaments could easily buy a wife for it, and sometimes it is paid as a tribal tribute by one who may have to pay blood-money, or is unable to give the statutory pig as atonement for a murder.

Another shell ornament is the armlet, made from the lower part of one species of a conical shell; a section of this adornment would present the figure of a pointed oval, and, according to the part of the shell from which the armlet has been cut, its ends either meet or overlap without touching. To it they sometimes attach European beads or little fragments of tin. Its manufacture entails a great deal of work and a long continued grinding on stone or other hard substance. Sam had a very fine one which he presented to a man in order that that man might buy a wife, and my headman's generosity will be understood when I mention that one of these armlets fetches £5 at Port Moresby. A very affluent person will wear one on each arm, or two on one arm, as I sometimes observed was the case among the coast natives. This occurred chiefly at Hula.

As regards households and tribal government, the Papuan customs are simple in the extreme; there is no augmentation of households on the patriarchal system of the sons bringing the wives under the parental roof. Each household consists of the father, mother, and children. The sons when they marry set up a separate establishment, and when all have married the grandparents usually remain alone.

BUYING A WIFE : A NEW GUINEA WOOING.

The suitor is depicted making an offer for the girl seated in the hammock beside her father.

The men marry after they are eighteen and the girls much younger, for they are considered ready for double-blessedness at fourteen. In the case of the men, there are exceptions to this rule, for we met an experienced young gentleman of fourteen, Kaukwai, who confided to us, with an air of deep wisdom, that he had already had two wives and had dismissed them both.

In the villages there was no clearly defined form of government. There was, of course, invariably a chief, but his authority was not great, and nowhere did I see an autocrat, except Mavai, with whom the reader is already well acquainted. There is no regular council of elders, but in isolated instances the younger men may go to the elder for advice. The villagers, however, are wonderfully conservative in their institutions, and marriage between distant villages is uncommon. The man who dares to bring a wife from a distance gains great credit for an enterprising person. At Amana, for instance, we found an interpreter who had married a Foula woman, and this person was accounted strong-minded. He had either learnt the Foula dialect from his wife or had acquired it while he was staying at Foula courting her.

The method of wooing is, as with all primitive peoples, more commercial than romantic. The intending suitor generally comes to the point during a tribal dance which has been arranged by calling from hill to hill. If the woman agrees to the match, the wooer does not think it at all necessary to make overtures to her father, but should negotiations be required he is neither laggard nor bashful. He puts the price in his

bag and approaches the house of the sire, entering boldly and sitting down unbidden. Not infrequently the girl also comes in and sits probably in a hammock, listening to the debate on which her destiny hangs. The suitor at once names his price; if the old man thinks this is a promising bargain, he shows himself quite willing to discuss matters. If there is tobacco, the suitor takes up his host's "Bau-bau," draws a few whiffs, passes it to the father, scratches his head violently with both hands, and proceeds to haggle. Should the father think the match a good thing, he seldom withholds his consent long, but if he considers the young man is under-bidding, he holds out stiffly till the youth has raised the price sufficiently. As soon as the father consents, the bride is taken away at once and without any fuss. There is no ceremony and no wedding feast.

The women are the agricultural labourers of Papua. Early in the morning they go out to till the gardens and the yam- or taro-patch; they are the hewers of wood and the drawers of water. Every night at Hanuabada we used to watch the long files of them wading across the shallow channels to the villages, carrying the great bundles of wood they had collected. Their families are not large, seldom more than two or three children, and though they treat them quite kindly, there is no demonstrative affection. At seven years old the children are expected to assist in domestic affairs, and begin to take their little part of carrying water and firewood to the village. Their faggots are tied up with wild cane string and are carried home on the women's backs.

When the women go out to the garden, or when they aid in heavy transport service, as in the case of my expedition, the baby always accompanies them, and I counted at least six different ways of carrying the infant. 1. In the net-bag, slung behind, and supported by the band passed across the mother's forehead; to save abrasion a leaf was placed between the forehead and the knot made by tying the two ends of the bag together. Among many of the women I noted a patch of white hair, just at the point where the knot had pressed. 2. The child on the top of the load, supported by the mother's left arm. This, of course, refers to the time when they were carrying for us, and had a particularly heavy burden. 3. Astride of one shoulder; this was practised by the men, and the infant was so placed as to face the side of his father's head. 4. Also a man's method, pick-a-back, with the little legs round the father's neck. 5. The child with the arms clasped round the father's neck and no other support at all. 6. Similar to the last, except that the child in this instance was carried by the mother, who, being blessed with an exceptional spread of "Rami" behind, could allow the little one's feet to rest comfortably on that.

In the village communities on the hills there was no very regular observance of meal-times. They ate when they wanted to, but on the coast a meal was taken in the morning, in the afternoon, in the early evening, and sometimes at night. The cooking was done by the women in the round earthenware pots mentioned in the description of the Hanuabada potters.

MANNERS AND CUSTOMS

In point of dress and appearance the mountain people differ widely from those of the coast. The place of the "Rami" is taken by the cheebee, or perineal band, a simpler garment than even the fig-leaf. They are a shorter people, with better developed legs than the coast natives, which is no doubt owing to the extraordinary exercise imposed on the limbs by the difficulties of the ground.

The women wear fewer adornments than the men, their principal ornaments being the dogs' teeth necklace and armlet, and on the breast a pearl shell, ground with a stone night and day for three weeks until the outer shell is gone and the mother-of-pearl is left bare and polished. They tie up their hair with bark so that the hair itself can hardly be seen, and sometimes they plait it up into small tails. They carry the customary bag of small odds and ends, and their weapons are distinctly formidable. These consist of the spear and club only. The spear is pointed and jagged, and is made of very hard red-wood; the club has a heavy stone top, elaborately hewn into sharp bosses. The Dinawa people do not know how to make these clubs, which are manufactured in the Keakama district, and their presence in the hills proves that there is some system of commercial distribution.

But the most splendid of all the articles of the Papuan costume is the feather head-dress, 16 feet high, which forms the central point of attraction when it occurs in a tribal dance. This ornament is extremely rare, and is always an heirloom, for it has taken generations to complete. It is a wonderful,

1.—A STONE-HEADED CLUB.

2.—VARIOUS FORMS OF THE BAU-BAU, OR TOBACCO PIPE, SHOWING DIFFERENT KINDS OF ORNAMENTATION.

Note on the left of the pipes the bowl of one, showing how the end is closed by the natural section of bamboo.

3.—A STONE AXE.

fantastic device of feathers, built upon a light framework. The Bird of Paradise and the Gaura pigeon are laid under tribute for its construction, and the feathers of the different birds, and of different species of the same bird, are kept carefully apart, and are arranged in rows according to their natural order. A few lines of Bird of Paradise, a few lines of Gaura pigeon, then a few lines of another species of Bird of Paradise, and so on. The whole contrivance is most fantastic, and looks really impressive in the weird light of the torches as the dancers, decorated with flowing bunches of grass behind, proceed with their revel.

The dances of the hill tribes are not elaborate in form, and consist principally of violent jumping up and down, accompanied by wild singing and noise, but the coast dances, as carried out by the members of the native police at Port Moresby, by permission of the authorities, although less effective in point of costume—for little dress at all is worn—have something of the orderly and progressive arrangement of the ballet of civilisation. On the day set apart for the dance at Port Moresby, a circle of native drummers would seat themselves on the ground, and would begin their monotonous performance—bang, bang, bang; bang, bang, bang—apparently without end, and with a wearisomely monotonous rhythm. Suddenly, to the orchestra and the spectators would enter two members of the Fly River police off duty, carrying a long, thin reed. These would begin the performance. They jumped up and down in regular rhythm, crouching lower and lower as the dance proceeded, their movements getting quicker and quicker

as the drums "gave them pepper." Then, still crouching and still jumping up and down with incredible swiftness, they would back out and disappear round the side of the house. This ended the first figure. For the second figure probably twenty of the force would enter, marching sedately in Indian file, the drums playing a slower rhythm. Suddenly the performers would stop, then they would turn their heads from side to side, and begin to move their legs slowly in time to the drums. Still wagging their heads, and without any increased motion of the limbs, they would proceed right round the ring of spectators and retire, without any perceptible quickening of pace. For the third figure they reappeared in files, moving their heads, the limbs still going in slow time. They advanced and retreated to and from the spectators several times, singing as they went, and finally backed out.

We witnessed also a dance of the Mombare people, who are likewise members of the native police. With the dancers was one woman. Their method was to jump up and down, and thus they worked slowly round the oval enclosure formed by spectators. They held themselves erect all the time, and their demeanour was not serious, the dance being accompanied by loud shouting and great perspiration. During all these dances the Orgiasts fell into a terrible state of excitement, and often could not stop dancing until they fell quite exhausted. Mountain dances are sometimes accompanied by tragedies, for the confusion of the revel is made the occasion for wiping off old scores, and a dancer will suddenly fall dead, struck through by the spear of his enemy.

CHAPTER XVI

BURIAL, WITCHCRAFT, AND OTHER THEMES

A Short-lived Race—An Aged Man a Curiosity—Burial Customs—The Chief Mourner painted Black—Period of Mourning brief except for the Chief Mourner—No Belief in Natural Death—Poison always Suspected—Religion all but absent—Vague Belief in Magic—Fifi a Form of Divination—How practised—Its Utter Childishness—No Idea of Number—Forest Warnings—"Wada," another Form of Sorcery—Mavai's Hideous Magical Compounds—A People seemingly without History or Legends—Pictures understood—Fear of the Stereoscope—The "Bau-bau" or Social Pipe—How Made and Smoked—Incidents of Travel—The Stinging Trees—Ideas of Medicine—Sovereign Remedies—Bleeding—How practised—Hunting—The Corral—A Strange Delicacy—Story of Native Trust in Me—A Loan of Beads—Children and their Sports—Thirty Ways of Cat's-Cradle.

CHAPTER XVI

BURIAL, WITCHCRAFT, AND OTHER THEMES

THE Papuans are not a long-lived race. The mountain people die off about forty: at Googooli, high up on the mountains, we saw one very old man, who may have been sixty years of age—the only example of longevity that we came across. He was a very pathetic spectacle: his features were almost gone, the skin was terribly shrivelled, and the eyes sunken. He was bent almost double, and had a long white beard. His fellow-tribesmen regarded him as a great curiosity, and brought him to see us. Despite the decrepitude of his body, however, there was no trace of senility: his senses were unimpaired; and the poor old creature showed great gratitude for a gift of tobacco.

Of the mountain people's burial customs I have no precise knowledge, but at Hanuabada we were able to observe a coast funeral. The dead body was wrapped in a net and lashed to a pole, which was borne by two bearers. To the funeral, which was celebrated the morning after death, the whole village turned out, and followed the corpse without any regard to precedence, except that the chief mourner — in this case, the mother — walked immediately behind the bier. The chief mourner is invariably blacked all over with charcoal, but the others wear

no token of sorrow. Just as the procession started the women set up a tremendous wailing, which was continued all the way to the grave. On reaching the burial-place, which was some seven minutes' walk from the village, the corpse was set down, and the mother, seating herself at its head, encircled it with her arms, the hands being clasped below the chin, and began with shrill cries to try to call her son back to life. For twenty minutes, while the shallow grave was being dug, this ceremony proceeded, while the rest of the mourners sat around. The corpse was then lifted into the grave without much reverence and was covered up, the mourners waiting until this was done, whereupon they walked away and, as far as they were concerned, the mourning was over, and far from being a cause of sorrow, it had become merely an interesting topic of conversation. The chief mourner, however, if a woman, keeps the house, and sees no one after the funeral for a space that may extend to three weeks. It is indeed very difficult to persuade a mourner to leave the house. Another method of disposal of the dead is tree-burial. A light framework of bamboo or sticks is laid in the fork of a tree. On this the corpse, wrapped in bark, is exposed. When nature has done its work on the remains, the bones are afterwards distributed among the friends of the deceased.

They do not believe in a natural death, and attribute every decease to poison in a vague and general sort of way. Belief in another world they have none, and the most elementary ideas of religion do not seem to exist. There is not even any definite

1.—YOUNG NATIVES' CURIOSITY ABOUT MY CAMERA.

2.—WOMEN CARRIERS ON THE WAY TO PORT MORESBY.

superstition, but only a sort of vague and particularly childish belief in some kind of magic under the name of "Fi-fi." This is a sort of divination, and is practised at night by a recognised medium, usually a girl, who is "Fi-fi," and yet who is, at the same time, believed to represent this mysterious power known as "Fi-fi."

Fi-fi is supposed to be a spirit always invisible and occasionally audible. It is considered a bringer of both good and bad luck, but although this is so no attempt is made to propitiate it. The cult indeed is so absurd that the wonder is that the people believe in it at all; yet, although there is apparently nothing supernatural on the face of it, the Papuans are willing to credit its manifestations. When a tribe wishes to know its luck, and when a hostile attack is imminent, it has recourse to the rites of Fi-fi; these are always celebrated at night. The crowd gathers round the fire, and the girl who is supposed to be the medium of the power is told off to communicate with Fi-fi; from that moment, by a peculiar confusion in their minds between the spirit and the medium, she becomes Fi-fi to all intents and purposes. She retires to some corner near at hand, where she is not seen, and from there she whistles in different keys. The sound is made entirely at the medium's discretion, but the moment it is heard the people exclaim that Fi-fi has come, and they judge by the whistling whether the omens are favourable or not. They would seem to have an idea of two Fi-fis, for the girl's first call is two short notes repeated. No immediate answer comes, and the people round the fire remark casually to

each other that the other Fi-fi has not heard, but they say, "Gua-fua"—that is, "Wait." The girl whistles again, and in a moment or two answers herself; then the listeners round the fire exclaim, "Oi-kai-yoi, Fi-fi-mai" ("You hear, Fi-fi has come"). Occasionally we have said to them, "Tell Fi-fi to speak," but they refused point-blank; and when we asked them why they did not bring Fi-fi, they said they could not. The priestess varied her whistle, and then interpreted her own messages. Once a woman is chosen to communicate with Fi-fi, she retains the office for life. This form of divination occurred most frequently at Waley.

The priestess is not above the Delphic trick of framing her oracles to suit political necessity or her own inclinations and likings. One would think that people of such general common sense as the Papuans would see the possibility of deception, but they have implicit faith in Fi-fi's manifestations.

Certain insects, I noted, were also regarded as "Fi-fi." When a particular species of fire-fly entered the house at night the natives immediately predicted bad luck, or impending attack and extermination by hostile tribes. This failure of intelligence at one point is paralleled by their inability to grasp the simplest idea of number. Further than three they cannot count, although we often tried, by means of their ten fingers, to instil some notions of a higher calculus into them.

On the march we observed the existence of a curious system of warnings. Now and then a green bough, newly broken off, would be found lying in the path, and the sight of this almost drives the natives out

of their wits; for it is the recognised symbol that some one has been there who does not want you to pass. It has a correlative in a friendly symbol, which is also a broken bough, but in this instance it is not entirely severed from the tree.

Another superstition is "Wada," which, as far as one can ascertain, seems to be a belief in an invisible man who stands near a tree, but is so like it that he cannot be seen. As you go through the forest "Wada" may touch you, and then you are doomed. After this there is nothing for you to do but go home and die; and so great is the power of suggestion, that a person who believes he has been touched by "Wada" generally does die.

Mavai practised "Wada," but it took a somewhat pharmaceutical form with him. He made an abominable mixture of rotten bananas, and all sorts of decomposing matter. This he kept in his house and gave to persons he wanted to be rid of, generally without any evil effect, but that never shook his belief in the efficacy of his decoctions. It was delightfully comical to see the seriousness with which he sat compounding his horrid messes, and telling you of their dire results. It may be wondered how ever he got the dread substance administered; but then, of course, Mavai was all-powerful, and the person who refused to take his "Wada" drugs would probably have encountered "Wada"—a sure and certain "Wada"—in the person of Mavai himself.

There was also some confusion of "Wada" with a stone or a stick, and therein probably one might find the truth about the real deadliness of the charm.

The Papuans are entirely without history as a people, and of personal tradition they have only the merest scraps. At Port Moresby they had a legend of an eclipse, and referred to it as "Labi labi" (that is, "night"). They have no tales of gods or heroes, and their chief interest is the question, "Where are you going?" and "What are you doing?"

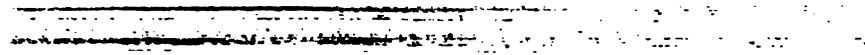
They were very keen to see our photographs, and had no difficulty in understanding a picture: therein they differed greatly from the debased Australian aborigines, who could never grasp the graphic symbol, and in the famous instance, when shown a picture of Queen Victoria, said it was a ship. They picked out their friends' photographs at once, and recognised them with exclamations of delight. For one of our men, however, our stereoscope proved too much, as the relief of the figures had probably been too realistic; and on being invited to look at a group of our retainers, he no sooner put his eyes to the glass than he howled and nearly dropped the instrument. He ran away, saying, "Mookau meego" ("Man lives there"), and could not be persuaded to look again.

I hope that during my next journey I may be able to pierce more deeply into the psychology of the Papuans, and it may be that, with greater familiarity, they will communicate more of what they know; for it appears improbable that they should be as destitute as they seem of legend or myth.

Over the "Bau-bau," or social pipe, I trust there may be some discoveries in store for me. The Papuan pipe is itself a most interesting instrument, not only in its everyday use, but in its construction and in

SMOKING THE HAU-HAU.

This curious pipe is made of a length of bamboo closed at each end. Into a small hole at one end is inserted a small green leaf rolled like a grocer's paper bag. In this the lighted tobacco is placed. The smoker then reverses the tube, and sucks in the smoke until the bamboo is filled. He now takes out the tobacco and inhales a long whiff. The operation is repeated as long as the tobacco lasts.



the method of smoking. It is made of one joint of bamboo, closed at both ends by the natural section of the bamboo. In the side of the cylinder near one end they drill a hole by applying a piece of hard wood made red-hot. They press the red-hot wood to the bamboo, and blow it to incandescence, repeating the operation until a hole is pierced. They next knock a hole in the opposite end of the bamboo, so as to admit a current of air. The red-hot wood is now applied again to the original hole, and they blow through the hole knocked in the opposite end until the small hole in the side is gradually enlarged. The "Bau-bau" is now complete, except for its ornamentation. Elaborate patterns are scratched on the hard enamel of the bamboo with glass, a knife, a stone, or red-hot wood, and the speed with which this decoration is accomplished is extraordinary.

In the accompanying illustration I show some of the prevailing patterns. On the march our men would cut a bamboo, and on reaching camp would borrow some suitable tool from us, and make a pipe in a very short time. They were sufficiently accomplished smokers, however, to like an old "Bau-bau" best, and gave the reason, which will be appreciated by every smoker, that tobacco is not good in a new one.

The method of smoking is elaborate. They roll a leaf into a little horn, and insert it in the smaller hole on the side of the "Bau-bau," within this leaf is placed the charge of tobacco which they light, and then placing their lips to the end hole they draw. The little horn, or cigarette as one may call it, is now removed from the hole in the side, and if the pipe is

new they blow away the first charge of smoke, by placing their lips to the hole in which the cigarette was originally inserted. Again the cigarette is placed in the small hole, and the pipe is drawn from the end hole. This time the smoke is intended to be used, so the cigarette is removed from the small hole, and the smoker applying his lips thereto inhales the whole charge. Again the cigarette is removed, and the pipe is filled by a long pull at the end hole, but this time the smoker does not inhale the charge himself, but removes the cigarette and politely hands the charged pipe to his neighbour, who punctiliously rubs the mouthpiece, and enjoys the long whiff. Very often there is one drawer for an entire party, whose duty it is to fill the pipe with smoke, and pass it so filled to each of his companions in turn.

They usually sit in a circle for these smoking parties; and in camp the "Bau-bau" is continually used. They grow their own tobacco, which is very rank, and not good smoking at all. In fact, the natives themselves cannot inhale much, as it makes them giddy; and they are not infrequently seized with severe fits of coughing when the fumes have proved particularly suffocating.

The supply of tobacco is carried in the armlet or behind the ear—this last method being not unknown to the festive Cockney, who, on Bank Holiday, is seldom complete without a cigarette so worn.

The pipe at the end of the day's march was invariably well earned, for the heartiness and endurance of my carriers were almost incredible. On one occasion I despatched a party to one of my camps, thirty miles

distant, through an almost inaccessible mountain region. They left at eight o'clock in the morning, and came into camp again at five in the afternoon of the following day, having accomplished the whole journey of sixty miles, and the latter half while they were burdened with their loads of rice, tinned provisions, tobacco and hardware, and all the other miscellaneous articles known as "trade." The women's loads weighed about 50 lbs., the men's somewhat less, for the women are the great burden-bearers in New Guinea.

The difficulties of our march were heightened by certain natural features, particularly the stinging-trees, which occurred close to Madui. The tree in shape, size, and foliage resembles a sycamore, and has a leaf of which the under side is extremely rough and covered with spines. These possess a stinging power like that of the nettle, only much worse, and the irritation lasts far longer. The slightest touch is sufficient to wound. First a white blister appears, then redness, covering about a square inch around each pustule; rubbing aggravates the irritation, which shortly becomes maddening. The pain is not allayed for at least twelve hours; and I have never observed any natural antidote growing in the vicinity of this stinging-tree, as the dock-leaf grows near the nettle. Needless to say, the natives take the utmost care to give these trees a wide berth.

A smaller stinging-plant, resembling our nettle, only larger, with a rough under side of pale pea-green, is also found at intervals in the forest; both sides of the leaf possess the power of irritation. The natives

use it as a universal specific for all ailments. As soon as they come on a clump of this plant the women discard their loads and gather bundles of the leaves, which they carefully preserve for future requirements. It is also applied probably for the sheer pleasure of it when they have no actual disorder, and it is quite common for them to rub their bodies lightly with the leaves. This causes violent irritation, followed by a feeling of pleasant numbness, like that which results from the application of menthol. For a mosquito bite this is a most admirable remedy, since the irritation of the bite is allayed and goes down long before the irritation of the leaf has passed. It is a curious example of the old medical practice of counter-irritation. Although we were glad to resort to it for mosquito bites, no European would without that cause risk the irritation for the sake of possible future benefits.

While on the subject of Papuan sovereign remedies, I may mention a curious form of bleeding which is in use among the tribes, especially among the younger men. The bleeding is performed by two persons, who sit opposite to each other. The operator takes a small drill, or rather probe of cassowary bone brought to an extremely fine point, and this is attached to the string of a tiny bow about 4 inches long. Holding the bow as if he were going to shoot, the operator aims the little probe at the patient's forehead, draws the bow slowly, and lets the string go; the probe is thus brought into sharp contact with the patient's skin, and the operation of drawing the bow and letting fly the arrow is

repeated again and again until blood is drawn. It should be remembered that the probe or arrow is always attached to the string and never escapes. The patient now leans forward, and the blood is allowed to flow profusely on to the ground.

I have often seen as much as half a pint allowed to escape. When faintness supervenes the wound is staunched with ashes or any convenient styptic, and the patient sits up. If the ashes fail to act, cautery with a hot cinder is practised. Headache is the usual trouble for which this remedy is applied, and this frequency of bleeding may be the reason why there is no heart disease or sudden death among the natives. This may probably lend colour to the theory of some physicians, that the increase of heart disease and sudden death in civilised nations is due to the entire abandonment of bleeding, once certainly carried to excess.

Although the women do all the hard work of the house and in the field, they are nevertheless regarded with affection. It is erroneous to suppose that they are compelled to be burden-bearers because they are lightly esteemed. As far as my own observation goes, the men are left free of loads, or are given lighter loads, in order that they may be ready to protect the women from the sudden raids of other tribes. Their gardens are often a considerable distance from the village, and the women never go to gather yams or taro, or to till their patches, without an escort of young men as protectors.

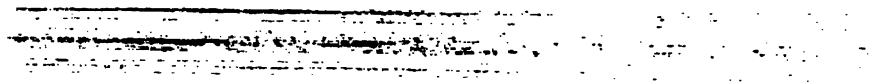
On the other hand, the men are not idle, but perform their part in the economic system by

acting as hunters. Their chief game is the pig, the cassowary, and the wallaby. They hunt this quarry with spears, and drive the game into nets which have been spread between the trees and posts in the forest over a considerable area, forming a corral, approached by a long decoy, two long lines of nets gradually converging. When the nets have been set the drive commences. The beaters extend themselves for a considerable distance, and, with the assistance of dogs, gradually force the game towards the nets. The game is plentiful, and as it closes towards the corral, birds and beasts are forced into the centre in crowds. At length the hunters close round the opening, a final rush is made, and the victims are despatched with spears. These hunting bouts occur only at long intervals, and on the lower slopes of the mountains. After a successful drive there is a great jollification. Fires are built in the camp, the game is roasted, and in an incredibly short space of time every portion has disappeared, and the people are lying around gorged.

In one particular delicacy favoured by the Papuans I was, as an entomologist, very much interested. The natives are exceedingly fond of the larvæ of a large tropical beetle, one of the *Passalidæ*, which are found in decayed tree trunks. Whenever the natives noticed the presence of the borings made by the larvæ, they seized a native instrument, probably one of their stone axes, dug out the dainty, which is about five inches long, and ate it raw. Should a fire be handy, they would sometimes throw the larvæ into the ashes, give it a turn or two, and then enjoy it; the flavour is

A PAPUAN HUNT.

The natives drive their game, chiefly the pig, the cassowary, and the wallaby (a small kangaroo) into a corral, and then despatch the quarry with spears.



said to resemble that of a lemon. I could never, however, bring myself to try it.

The Papuans are a jovial, light-hearted people, and when a stranger has once won their confidence they are hospitable and friendly. Their trust when once gained will stand even rather severe tests, as I found to my great satisfaction and advantage after a stay of some months at Mount Kebea. I was anxious to push farther into the interior, but found myself absolutely without beads, which are the journey money of the explorer. It would have delayed me too long to have waited for the return of my messengers, who had been sent to the coast for a further supply, so I hit upon the expedient of trying how far my credit with the natives would go. I called the tribe—men, women, and children—together, and in a lengthy harangue I explained the situation to them; finally asking them if they would lend me their beads, which every one of them wore on his or her person in considerable profusion, promising them that on my return I would pay them double the quantity. This tribe, be it noted, was not to accompany me farther, and the beads would have to be given to other bearers, whom I should engage as I proceeded. These ornamentations are to the Papuans as precious as her pearls are to a *grande dame*, but, nevertheless, every man, woman, and child immediately consented to the loan. This appreciation of the idea of credit—one might almost say of banking—denotes a considerable receptivity of mind, and shows that the Papuan cannot be inaccessible to civilisation.

I cannot pass from the subject of the Papuan at

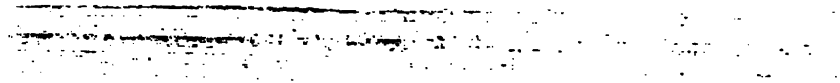
home without saying something about his children, who are the merriest little creatures imaginable. Without being very demonstrative, the parents like them well enough, and the child is not at all hardly used—although, be it remembered, the family pig has a deeper place in the adults' affections. In times of stress it is to be feared it is the pig that is first considered, probably because it is so important an article of diet. The devotion to this animal goes far further than that of Pat, for it is not unusual to see a Papuan woman acting as foster-mother to a young pig.

But to return to the children; up to the age of seven their life is one long holiday, and they very early begin to practise the use of weapons. Spear-throwing is their favourite sport; for this they use a long stick of grass with an enlarged root. They pull off all the leaves until the shaft is clean, and the root is allowed to remain to represent the heavy head of the spear. Their targets are each other, and at a very early age they have acquired a marvellous dexterity, hitting each other with nicest accuracy even at 40 feet range. Every hit is registered with a delighted jump and a howl. The amount of cleverness and dexterity required for this spear practice was realised by my son, who tried it, and found that not only could he not hit, but he could not make the spear carry. Very small girls play also at spear-throwing, but they give it up early.

We were very much amused to find the presence of "Cat's Cradle"; we had thought to amuse the little ones by teaching them this game, but we found

that they were already more than our masters therein; for they no sooner saw what we were after than they let us know that they were well acquainted with it, and whereas we had just the old stereotyped process to give them, they showed us thirty different ways. They did not, however, play in pairs as we do, the players taking the string from each other's hands in turn, but each child sits by himself or herself and works out the pattern. It is really amusing to see how they effect the different changes and the regular routine of forms by the movement of the fingers alone, without the aid of another pair of hands.

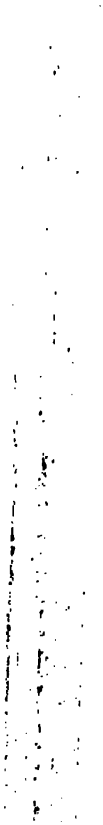
The dogs at Epa and Port Moresby were highly favoured animals. Not only had they the run of the house, but each house had an entrance sacred to the dog. To this access was given by special dog-ladders 9 inches wide, with the rungs quite a foot apart, up and down which the animals ran like monkeys.



CHAPTER XVII

A NOTE ON BRITISH TRADE PROSPECTS IN NEW GUINEA

Sandal-wood—The Sea-Slug—Copra and Cocoa-Nut—Coffee—Cocoa—Chillies—Rubber—Stock-Raising—Gold—Tobacco—Imports—German Enterprise—Our Lost Coaling Station.



CHAPTER XVII

A NOTE ON BRITISH TRADE PROSPECTS IN NEW GUINEA

THE intelligent observer of New Guinea cannot fail to recognise that the country presents a vast unopened field for the development of British trade. Many sources of wealth are as yet absolutely untouched, but experiments that have recently been made in coffee, tobacco, cocoa, and rubber, yield the richest promise. The geographical configuration of the coast will greatly aid the enterprising trader, for many centres of industry can easily be approached by water at such inlets as Hall Sound, and the cost of transport from the interior would consequently be a mere bagatelle.

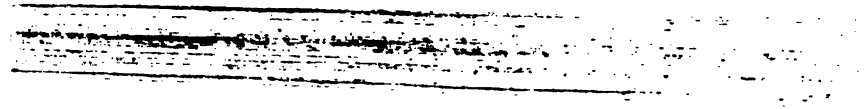
One of the chief industries is sandal-wood cutting. The sandal-wood is found in arid, elevated regions, and the particular spots where the trees grow in any quantity are known to the trade as patches. These patches, however, do not signify that the trees grow closely together. One tree might be found here and another might not occur for a hundred yards or so; but still there is an area of sandal-wood growth sufficiently definite to justify the title "patch." For any one who understands the intricacies of the situation, and the proper method of going to work, there is something to be made; but at present the develop-

ment of the trade is beset with difficulties which can only be surmounted by one who is thoroughly familiar with the country and the conditions.

A rich source of income, still only little worked, is the trade in *béche-de-mer*, the sea-slug, which is an indispensable article of seasoning in every Chinese kitchen. This commands £70 a ton in the China market, and the variety known as the "black fish" fetches as much as £100 a ton. It is used for thickening gravies and soups. These molluscs are about 9 inches long and 3 inches thick, and are to be found adhering to the corals. The Papuans dive for them, and when they have secured them they are split open, dried in the sun, and packed in boxes. This trade could be made very profitable to any capable operator who cared to embark a moderate capital in its development. Divers can be had for a little tobacco or a few shells, a knife or an axe, but the chief expense is the preparation and preservation for the market. As a matter of fact, an enterprising Brisbane firm has lately introduced the tinning system for this mollusc, but the China market is supplied with the dried commodity untinned.

There is also much to be done in copra and in cocoa-nut products generally. Large cocoa-nut plantations pay well, as every part of the tree can be utilised, and there is no doubt that a great deal of business can be done with Java, which at present cannot produce enough cocoa-nut fibre for its mat industry, and actually brings consignments all the way from Ceylon. The copra is in great demand amongst soap-makers, and one large firm has pros-

HAULING UP A LOG FOR BUILDING THE CAMP AT DINAWA



pectors at work in the interior of the islands with a view to increasing the supply. To my own knowledge efforts are being made to extend this trade, by several Europeans, east and west of Hall Sound, but there is plenty of room for others without in any way damaging the prosperity of the industry.

New Guinea is favourable to the production of coffee, although the plant is not indigenous to the island. A fine quality is grown at Wariratti. The plantations are flourishing, but here again the enterprise is still young. The trade is so new that the experimental stage is hardly passed. It cannot be doubted that Australia offers a vast and lucrative market to the future coffee grower of New Guinea.

Cocoa and chillies thrive in the Mekeo region, and this district is also very rich in fruit. The Government at Port Moresby often sends down a sailing vessel to bring back large consignments of fruit for the convicts in Port Moresby jail. The fruit-farmer might find in the Mekeo region a richer California.

In about the same condition as the coffee is the rubber trade. Trees are found throughout the possession, and the natives have some understanding of the method of collecting the sap. Their operations are, however, very crude and rough. I question whether the New Guinea rubber would ever rival in excellence the South American variety (*hevea Braziliensis*), which is undoubtedly the finest in the market, although Ceylon is just commencing to send rubber which may run it hard.

To the stock-raiser New Guinea offers a tempting field. At the Mission of the Sacred Heart on Yule

Island I saw remarkably fine cattle—cows and oxen—which had doubtless been introduced from Australia. Not only the headquarters of the Mission, but the outlying stations, were plentifully supplied with milk and butter, and, at the time I was there, they hoped to be in a position to kill a beast a week, an important consideration, for fresh meat is valuable in New Guinea. I did not see sheep in New Guinea at all, but goats were met with at Hall Sound, although they are not raised in any great numbers. On Yule Island the pasturage is splendid, and drought, that terror of the Australian squatter, is by no means frequent.

Turning to the mineral wealth, for the past five years gold workings have been carried on at the Yodda Fields, on the Mombare River, in the north-east portion of the island. The gold is alluvial. Although I cannot give the exact figures of the output, some idea of the productiveness of the region may be obtained from the fact that, for the last five years, 150 miners have been able to live on these fields. When it is remembered that the price of provisions at the Yodda Camp is prohibitive, it is not an extravagant assumption to compute that each man must be turning out at least three ounces of gold per week to make it worth his while to remain. There are other workings in the Woodlark Islands, and there are certainly evidences of gold everywhere in the streams of New Guinea. It does not seem likely that the miners are turning their earnings to the best account at the present time. The local stores, of course, consume a great deal of their dust, and when a man has got a fair pile together he not infrequently goes down to Samarai, and has what

he calls "a good time," returning with empty pockets to begin his labour over again. I believe the Government is now making a road to the Yodda Fields, and when this is completed, the longer route will be abandoned, and provisions on the fields will be cheaper.

As regards imports for commerce with the natives, the chief desiderata are the articles technically known as "trade," with which the labour to be used for developing the exports is remunerated. The native generally desires to receive from the white man knives, axes, tobacco, Jews' harps, beads, dogs' teeth, and red calico; but it is to the exports that the enterprising trader has to look in the future.

The finest field for enterprise in New Guinea—and one which I have therefore left to the last to be dealt with—is tobacco. The district of Mekeo produces a magnificent leaf, of which the seed has been imported from Cuba. The syndicate that imported the leaf applied to the Government for 100,000 acres of land in the central division of British New Guinea, but this request was opposed by the New South Wales Government, without reason vouchsafed to the Government of the possession, whose officials in a recent report described this action as "a very serious blow to the immediate development of the country by Australian capitalists of high standing." The same report, while deploring this misfortune, remarks that the tobacco should do very well if the leaf is properly treated for the market, as the soil appears to be very rich. Very different was the action of the German authorities in the Kaiser's New Guinea possessions. With their usual indefatig-

able enterprise, the Teutons have financed a large tobacco undertaking, and are exporting the leaf in great quantities. Their syndicate has so far introduced methods of civilised trade that they have struck and issued their own coinage (which bears the image of a bird of paradise), and their five-mark, two-mark, and one-mark pieces are accepted by the natives instead of trade. These pieces are, of course, spent by the natives in the German stores. Not without reason did the Prince of Wales advise Great Britain to wake up.

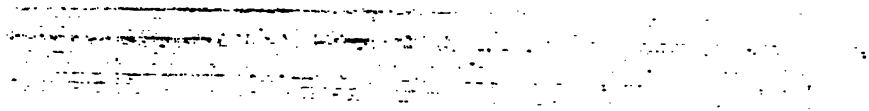
With all these extraordinary opportunities, it is a curious fact that, as regards shipping, the island is in a worse position for trade than it was twenty years ago. Even as recently as 1902, the *Moresby* was calling every five weeks at Port Moresby, but now her route has been changed, and she sails from Sydney to Singapore, calling at Port Moresby only once every two and a half months. In the interval goods and mails are carried in an erratic manner by a little steamer called the *Parua*, by the *Merrie England* (a Government survey boat), or by the *St. Andrew*, the Sacred Heart Mission boat. Two small sailing vessels, it is true, sail between Cook Town and Samarai, but this does not improve the communication with Port Moresby, the seat of Government, as these vessels make no call there. It is almost incredible that the second largest island in the world—the "Pearl of the East," probably the richest region in proportion to its size that Great Britain has the option of developing—is thus left hermit-like in the midst of the eastern seas. It is the more surprising when it is remembered

that New Guinea lies directly on the trade route between Sydney and the great commercial centres of China and Japan. We might have had a magnificent coaling station on the east coast of the island, in the Dampier Strait, but for the action of Lord Derby, when he permitted the Germans to extend their possessions so as to occupy almost a quarter of the eastern peninsula of the island. As matters stand now, a coaling station could only be established at such a point on the south-eastern coast that vessels coming and going from Sydney would have to double the south-east cape, thus making an awkward and almost impossible détour in these days when time is more than ever the essence of every shipping contract.

CHAPTER XVIII

NOTES ON SOME BIRDS OF NEW GUINEA

The Birds of Paradise—Remarkable Species observed—Native Names — Play-Places — Curious Habits—The Bower-Bird: Artist, Architect, and Gardener.



CHAPTER XVIII

NOTES ON SOME BIRDS OF NEW GUINEA

NEW GUINEA is remarkable for its paucity of mammals and its richness in birds. As we have already noted, at least 770 different species of birds are known, and to these doubtless many more will be added as the explorer ventures farther into the interior. The chief haunts of the blue bird-of-paradise, the *Paradisornis Rudolphi*, are in Central British New Guinea, at an altitude of from 4000 to 6000 feet. There are about a dozen species of the bird-of-paradise, and at Mafulu we obtained the following, of which I give, where possible, the native name:—

Lophorina atra	Wagoda.
Epimachus magnus . . .	Yawvee.
Astrapia stephaniæ . . .	Beebee.
Parotia Lawsii	Aliga.
Diphyllodis speciosa . . .	Kellolo.
Ptiloris magnifica . . .	——

Besides these we found two species of bower-bird—

Amblyornis subalaris.
Laurea lori.

The limit of the king bird (*Cicinnurus Regius*) was at an elevation of about 1500 feet. It has a brilliant crimson back, the throat crimson, with a green band edged with another narrow band of crimson.

The breast is white, the beak blue, two big tail feathers curve gracefully outwards, and end in spatulæ of brilliant green on the upper side. There are also shortish plumes on each side ending in a band of green.

At Ekeikei and Dinawa, but chiefly at Dinawa, were the playgrounds of the *Diphyllodis magnifica*. These were very remarkable. The bird chooses a fairly clear space among saplings ten or fifteen feet high. These it clears of leaves, and also the ground between, making all beautifully clean and level. There it dances, leaping from tree to tree, running along the ground for a little, and then taking to the branches again. Every movement is extraordinarily rapid. If any leaves are thrown into the enclosure the bird gets very angry, and flings them out again immediately.

Sam told me that on the Kebea he had observed the play-place of the *Parotia Lawsii*, which is even more singular. The bird digs a hole, at least a foot in diameter, and over it places cross-sticks. Above these again it strews leaves and other vegetable refuse, and on the top of that it dances. Its playtime is the morning, but during the day it haunts the tops of the highest trees, and is consequently very difficult to come by.

I was fortunate enough to be able to observe one of the latest and most wonderful discoveries among the birds-of-paradise, the *Paradisornis Rudolphi*, familiarly known as the blue bird-of-paradise. It feeds on the larvæ of beetles found in the umbrella head of the mountain pandanus. This tree has adven-

titious roots which spring clear of the ground to a height of sixty feet, and then throw out flag leaves in the shape of an umbrella. From the umbrella top hang fine clusters of scarlet fruit. The decomposition of the vegetable matter at the point where the leaves stretch out gives refuge to the pupæ of beetles of many diverse species, and these prove a great attraction to the blue bird-of-paradise, who finds them excellent eating. The bird is about the size of a jay, and is very gorgeous. The upper part of its wings is a sky blue; the side plumes are in gradations of brilliant greenish blue and ultramarine; when the plumes are spread there is also a band of brown feathers. The head resembles that of the common crow, but is smaller. From the upper part of the tail spring two elongated feathers with two light-blue spatulæ at the tips. In the same pandanus tree lives also the *Astrapia stephaniæ*, remarkable for its long tail, with two violet feathers and a white shaft. The upper part of this bird's breast is a most brilliant green, with a band of copper below. In one light it appears shaded with violet. The back of the head is violet with gold iridescence. The whole length of the bird is 2 feet 6 inches.

Equally wonderful is the bower-bird, at once gardener, architect, and artist. Not only does it build the most extraordinary nest known to naturalists—a long, tunnel-like bower framed like a delicate Gothic arch, but it actually lays out a garden. I have myself seen the creature's marvellous achievement. It has definite colour-sense, for it picks the blossoms of orchids, and arranges them in alternate lines of mauve

and white. The whole impulse is, of course, t
universal one of love, for among its rows of flowe
it dances to its mate. This was probably the prettie
and most fascinating of all the sights provided
nature in New Guinea, that land of surprises.

APPENDICES

APPENDIX I

NEW LEPIDOPTERA DISCOVERED DURING THE EXPEDITION

SPECIES.	PLACE.	SEASON.
Dicalleneura ekeikei, spec. nov.	Ekeikei	March and April
Gunda kebea, spec. nov.	Mount Kebea	March to April
Pseudodreata strigata, spec. nov.	Dinawa	.....
Tarsolepis sommeri dinawensis, sub-spec. nov.	Dinawa	.....
Pseudogargetta diversa, spec. nov.	Dinawa	May and June
Osica turneri, spec. nov.	Dinawa; Ekeikei	August and September; January and February
Cascera bella, spec. nov.	Dinawa and Mount Kebea; Ekeikei	.....
Hirsutopalpis fasciata, spec. nov.	Ekeikei; Dinawa	January and February; August
Omichlis hampsoni, spec. nov.	Dinawa	May and June
Omichlis dinawa, spec. nov.	Dinawa	September
Omichlis ochracea, spec. nov.	Ekeikei and Mount Kebea	.....
Omichlis griseola, spec. nov.	Ekeikei	January and February
Omichlis pratti, spec. nov.	Ekeikei	January and February
Omichlis rufofasciata, spec. nov.	Mount Kebea	March or April
Stauropus viridissimus, spec. nov.	Dinawa; Ekeikei	March and April
Stauropus kebea, spec. nov.	Mount Kebea	March and April

APPENDIX I

SPECIES.	PLACE.	SEASON.
Stauropus dubiosus, spec. nov.	Mount Kebea; Ekeikei	A series taken in March and April; January to March
Stauropus bella, spec. nov.	Ekeikei	January and February
Stauropus dinawa, spec. nov.	Dinawa	.....
Stauropus pratti, spec. nov.	Ekeikei	.....
Notodonta irrorativiridis, spec. nov.	Dinawa	May and June
Cerura multipunctata, spec. nov.	Dinawa	May and June
Thyatira dinawa	Dinawa	September
Thyatira ekeikei, spec. nov.	Ekeikei	January and February
Parazeuzera celæna, spec. nov.	Dinawa	August
Parazeuzera aurea, spec. nov.	Dinawa	September
Scopelodes dinawa, spec. nov.	Dinawa	August
Scopelodes nitens, spec. nov.	Dinawa	.....
Birthama dinawa, spec. nov.	Dinawa	.....
Contheyla pratti, spec. nov.	Dinawa	August
Contheyla ekeikei, spec. nov.	Ekeikei	March and April
Contheyla birthama, spec. nov.	Ekeikei	January and February
Dinawa rufa, spec. nov.	Dinawa	July and September
Dinawa nigricans, spec. nov.	Dinawa	August and September
Pygmæomorpha modesta, spec. nov.	Dinawa	August
Pygmæomorpha brunnea, spec. nov.	Dinawa	August
Lasiolimacos pratti, spec. nov.	Dinawa; Ekeikei	August and September; January and February
Lasiolimacos kenricki, spec. nov.	Dinawa	.....
Lasiolimacos ferruginea, spec. nov.	Ekeikei	January to February
Euproctis rubroradiata, spec. nov.	Dinawa	August and March

APPENDIX I

Species.	Place.	Season.
Euproctis pratti, spec. nov.	Dinawa	August
Euproctis irregularis, spec. nov.	Dinawa ; Aroa River	September
Euproctis albociliata, spec. nov.	Ekeikei	January
Euproctis novaguinensis, spec. nov.	Ekeikei ; Mount Kebea	.....
Euproctis sublutea, spec. nov.	Dinawa ; Mount Kebea	June and July; March and April
Diversosexus bicolor, spec. nov.	Dinawa	.....
Anthela ekeikei, spec. nov.	Ekeikei	.....
Dasychira subnigra, spec. nov.	Dinawa	August
Dasychira subnigropunctata, spec. nov.	Dinawa	September
Dasychira brunnea, spec. nov.	Dinawa	August
Dasychira minor, spec. nov.	Dinawa	August
Dasychira konricki	Dinawa	June to August
Dasychiroides obsoleta, spec. nov.	Owen Stanley range	.....
Dasychiroides nigrostrigata, spec. nov.	Dinawa and generally distributed	.....
Dasychiroides pratti, spec. nov.	Dinawa ; Ekeikei	July and August; January and February
Dasychiroides bicolora, spec. nov.	Dinawa; Mount Kebea	.....
Dasychiroides brunneostrigata, spec. nov.	Dinawa	.....
Lymantria ekeikei, spec. nov.	Ekeikei	January and February
Lymantria kebea, spec. nov.	Mount Kebea	.....
Imaus niveus, spec. nov.	Ekeikei and Mount Kebea	March and April
Imaus spodea, spec. nov.	Dinawa; Ekeikei and Mount Kebea	August; March and April
Imaus aroa. spec. nov.	Aroa River	January
Nervicompressa unistrigata, spec. nov.	Dinawa	July to September

APPENDIX I

SPECIES.	PLACE.	SEASON.
Nervicompressa lunulata	Dinawa	August
Nervicompressa albomaculata, spec. nov.	Dinawa	August
Nervicompressa dubia, spec. nov.	Dinawa	September
Nervicompressa kebea, spec. nov.	Kebea	March and April
Nervicompressa aroa, spec. nov.	Aroa River	.....
Lasiochra pulchra, spec. nov.	Dinawa	August and September
Squamosala nigrostigmata, spec. nov.	Dinawa	August
Taragama dinawa, spec. nov.	Dinawa	Taken in May and June, and again in August and September
Taragama rubiginea, spec. nov.	Dinawa	August
Taragama proserpina, spec. nov.	Dinawa	August
Arguda pratti, spec. nov.	Ekeikei	January
Isostigena bicellata, spec. nov.	Dinawa	Taken in May and again in August
Sporostigena uniformis, spec. nov.	Dinawa	.....
Odonestis centralistrigata, spec. nov.	Dinawa	August
Caviria dinawa, spec. nov.	Dinawa	September
Porthesia ekeikei, spec. nov.	Ekeikei	March to April
Euproctis swinhœi, spec. nov.	Mount Kebea	March to April
Euproctis virginea, spec. nov.	Ekeikei	January to April
Euproctis parallelaria, spec. nov.	Dinawa	August and September
Euproctis kebea, spec. nov.	Mount Kebea	March
Euproctis dinawa, spec. nov.	Dinawa	.....
Euproctis yulei, spec. nov.	Dinawa	August
Imaus pratti, spec. nov.	Dinawa	August and September
Deilemera kebea, spec. nov.	Mount Kebea	March and April
Deilemera dinawa, spec. nov.	Dinawa	August and September

APPENDIX I

Species.	Place.	Season.
Deilemera pratti, spec. nov.	Owen Stanley range	September and March and April
Mimas punctatostrigata, spec. nov.	Mount Kebea; Dinawa	August and March and April
Diacrisia pratti, spec. nov.	Mount Kebea; Dinawa	March and April; August
Diacrisia dinawa, spec. nov.	Dinawa	August
Diacrisia kebea, spec. nov.	Kebea	March and April
Celama fuscibasis, spec. nov.	Dinawa	August
Celama aroa, spec. nov.	Dinawa; Aroa River	January and February
Acatapaustus basifusca, spec. nov.	Dinawa	September and January
Acatapaustus ekeikei, spec. nov.	Ekeikei	March
Scoliacma bampetoni, spec. nov.	Dinawa	September
Nishada melanopa, spec. nov.	Dinawa	June to July
Acco bicolora, spec. nov.	Dinawa	August and February
Pseudilema dinawa, spec. nov.	Dinawa	August and September
Ilema ekeikei, spec. nov.	Ekeikei	January and February
Ilema dinawa, spec. nov.	Dinawa	August and September
Ilema costistrigata, spec. nov.	Ekeikei	August and September
Ilema unicolora, spec. nov.	Dinawa	August
Ilema hades, spec. nov.	Dinawa	.....
Ilema nivea, spec. nov.	Dinawa	September
Chryseglia bipunctata, spec. nov.	Mount Kebea; type, Dinawa	March and April; August
Œonistis bicolora, spec. nov.	Dinawa	May to June
Macaduma bipunctata, spec. nov.	Dinawa, type; Ekeikei	August
Halone flavopunctata, spec. nov.	Dinawa	August
Chionema dinawa, spec. nov.	Dinawa	August
Chionema charybdis, spec. nov.	Dinawa	September
Cleoloia aroa, spec. nov.	Dinawa	September
Asura ochreomaculata, spec. nov.	Dinawa	August

APPENDIX I

Species.	Place.	Season.
Asura flaveola, spec. nov.	Dinawa	September
Asura brunneofasciata, spec. nov.	Dinawa	August and September
Asura unicolora, spec. nov.	Dinawa	September
Asura sagittaria, spec. nov.	Dinawa	August
Asura rosacea, spec. nov.	Dinawa	August
Asura dinawa, spec. nov.	Dinawa	August
Eugoa tricolora, spec. nov.	Dinawa	August
Eugoa conflua, spec. nov.	Dinawa	August and September
Amphoraceras rothschildi	Dinawa	August
Parabasis pratti, spec. nov.	Dinawa	August
Collusa ekeikei, spec. nov.	Ekeikei; Mount Kebea	January and February; March and April

APPENDIX II

A NEW REPTILE FROM DINAWA

Toxicocalamus Stanleyanus

Rostral much broader than deep, just visible from above; internasals nearly as long as the præfrontals, which are in contact with the second upper labial and with the eye; frontal small, slightly broader than the supraocular, once and three-fourths as long as broad, as long as its distance from the end of the snout, a little shorter than the parietals; one postocular; temporals, one plus two; five upper labials, second and third entering the eye; three lower labials in contact with the anterior chin-shields, which are larger than the posterior. Scales in fifteen rows. Ventrals, 261; anal entire; subcaudals, twenty-five pairs; tail ending in a compressed, obtusely pointed scute, which is obtusely keeled above. Blackish-brown above; traces of a yellowish nuchal collar; upper lip white; two outer rows of scales white, each scale with a blackish central spot; ventrals and subcaudals white, with a black spot on each side, some of the ventrals with an interrupted blackish border.

Total length, 610 millimetres; tail, 40.

APPENDIX III

A NEW FISH DISCOVERED BY THE EXPEDITI

Rhiacichthys Novæ-Guineæ

Depth of body nearly equal to length of head, five to six time total length. Diameter of eye six or seven times in length of h interorbital width three times; snout but very slightly longer t postocular part of head. Dorsals VII., I. 8–9; longest spine longest soft ray $\frac{4}{5}$ length of head. Anal I. 8–9; longest ray long as head. Pectoral about $1\frac{1}{2}$ length of head; ventral as l as head, or a little longer. Caudal feebly emarginate. Ca peduncle $2\frac{1}{2}$ as long as deep. Scales strongly ciliated, 37 to 3 a longitudinal series on each side, 14 or 16 round caudal pedu Dark olive above, whitish beneath.

Total length, 225 millimetres.

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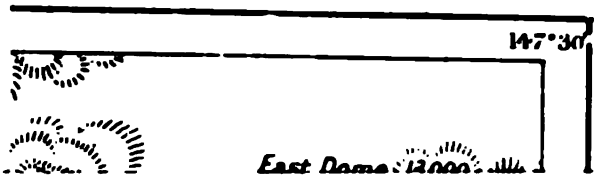
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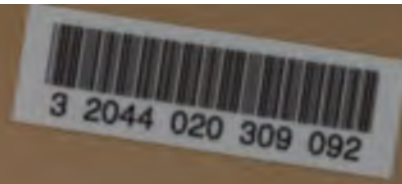

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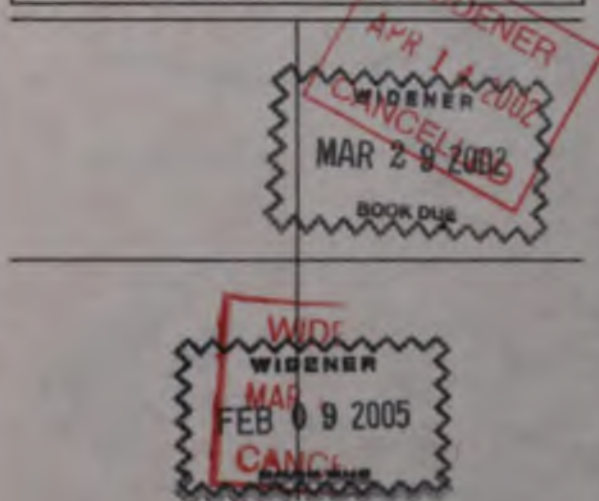

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